

**Entrepreneurship as a conversational accomplishment:  
An inductive analysis of the verbal sensemaking behaviors of  
early-stage innovative entrepreneurial teams**

Submitted by  
Betsy Campbell  
to the University of Exeter  
  
as a thesis for the degree of  
Doctor of Philosophy  
in Management Studies

September 2014

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

A handwritten signature in blue ink, appearing to read 'Betsy Campbell', is centered on the page.

## ABSTRACT

Within the stream of research on entrepreneurial opportunity there is a school of thought that affords entrepreneurs an agentic role in the creation of opportunities – with opportunities understood as a combination of both product and market innovation. Recently scholars working from this Creative Model have associated the opportunity shaping work of entrepreneurs with sensemaking – a social process in which teams gather information, ascribe meaning, and take action in the face of the uncertainties, which some have said define the context of entrepreneurship. Few, if any, scholars have studied the naturally occurring conversations between entrepreneurial team members as they discuss the information, meaning, and action relevant to their innovation efforts. This dissertation makes a contribution to current understanding of entrepreneurship by capturing the naturally occurring conversations of innovative entrepreneurial teams in action, analyzing these recorded conversations for use of sensemaking language, and comparing the language patterns between teams that achieve different levels of performance.

The Creative Model born out of academic theory is echoed in the lean startup philosophy that has come out of practice. Like Creative Model scholars, lean startup practitioners believe that entrepreneurs create opportunities. Seen through a lean startup lens an entrepreneurial team creates an opportunity by developing a minimum viable product; by finding the optimal intersection between the team's vision for an innovative product and the active behaviors of prospective customers. In this frame work, entrepreneurs are not exploiting preexisting opportunities, persuading customers to accept their imagined product, or building product based on what customers say they want. Instead lean startup entrepreneurs practice “design thinking;” they engage in an iterative learning process by building product and deliberately testing assumptions. Because the process for interpreting feedback from customers and advisers includes team meetings, the lean startup philosophy is positing that entrepreneurial teams verbally make sense of the uncertainties about the opportunity creation process through intra-team conversation.

The naturally occurring conversations of teams have been studied in other workplace settings in which teams face uncertainties (e.g. cockpits, hospitals, military units), and conversational competencies have been identified that separate high- and low-performance teams. This research borrows the concept of work as a conversational accomplishment and inductively explores the ways in which intra-team language might impact the success of entrepreneurial innovation teams.

This research project partnered with a lean startup contest run by a US university to study a collection of teams actively developing minimum viable products within a limited time period. Qualified teams were given recording devices and instructed to capture their intra-team conversations throughout the arc of the contest. As the weeks passed, the teams were reviewed multiple times by a panel of judges, and the judges decisions were used as the study's proxy for success.

Although the raw data included more than thirty hours of recorded conversations from six teams, the analysis focused on the conversations of the two teams that achieved the highest and lowest rankings in the contest. Using Conversation Analysis, ethnography, and descriptive statistics, this study has been able to describe the sensemaking language of these teams in three ways: based on an aggregate of all utterances in general, based on the type of uncertainty animating team conversations, and based on team performance.

Looking at and describing the data in these ways has resulted in a provisional theory related to the conversational competencies of entrepreneurial innovation teams and entrepreneurial stances toward uncertainty. These advances might have implications for both theory and practice. This research directly adds to the entrepreneurial cognition literature; providing a provisional theory that suggests new lines of inquiry into the dimensions of entrepreneurial agency. With regard to the realm of practice: the research might have applications for facilitators of entrepreneurial education and for entrepreneurs themselves.

## **TABLE OF CONTENTS**

<b>ABSTRACT</b>	<b>2</b>
<b>TABLE OF CONTENTS</b>	<b>4</b>
<b>LIST OF FIGURES</b>	<b>8</b>
<b>LIST OF TABLES</b>	<b>10</b>
<b>LIST OF PLATES</b>	<b>10</b>
<b>ACKNOWLEDGEMENTS</b>	<b>11</b>
<b>CHAPTER ONE: OVERVIEW</b>	<b>13</b>
The Structure of the Document	17
<b>CHAPTER TWO: THEORETICAL FOUNDATIONS</b>	<b>20</b>
Defining Innovative Entrepreneurs and Their Work	20
Relevant literatures	24
Entrepreneurial Cognition	24
Sensemaking	27
Studies of Workplace Interaction in the Tradition of Conversation Analysis	38
Limitations of Existing Research on Entrepreneurial Innovation	42
Research Questions	48
<b>CHAPTER THREE: METHODOLOGY AND RESEARCH DESIGN</b>	<b>49</b>
Contrasting Approaches to the Study of Entrepreneurial Innovation	49
Lodestars	53
The Social Construction of Entrepreneurial Opportunity	53
The Interdependence of Theory and Practice	57
The Theoretical Rationale Animating this Research Inquiry	60
Methodological Traditions	63

<b>Piloting Efforts</b>	<b>68</b>
<b>Data Collection</b>	<b>68</b>
<b>Data Analysis</b>	<b>70</b>
<b>Code Descriptions</b>	<b>74</b>
Primary codes within the Information Aggregate	75
Primary Codes within the Meaning Aggregate	76
Primary Codes within the Action Aggregate	77
Structural Codes	79
Integrating Coded Utterances with Language Forms in the Literature	79
<b>Samples from the Coded Data</b>	<b>81</b>
Yellow Team: High-performance team	81
Green Team: Low-performance team	83
<b>Originality of the Research and Its Potential Impact</b>	<b>85</b>
<b>Weaknesses and Contingencies</b>	<b>86</b>
 <b>CHAPTER FOUR: ETHNOGRAPHY OF AN ENTREPRENEURIAL WORKPLACE</b>	 <b>90</b>
<b>The Power of Place</b>	<b>90</b>
<b>An Unfolding Legacy: The Mentorship Kick-off Meeting for Semi-finalists</b>	<b>94</b>
<b>Private Reflections, National Concerns: The Finale, Demo Show, and Awards Ceremony</b>	<b>99</b>
<b>The Hidden Curriculum of Innovative Entrepreneurship: The Accelerate Contest and Entrepreneurial Education</b>	<b>107</b>
<b>Looking Back to Forge Ahead: The Twin Forces of Inheritance and Innovation in Entrepreneurial Education and Practice</b>	<b>111</b>
 <b>CHAPTER FIVE: OBSERVATIONS FROM AN INDUCTIVE INQUIRY INTO THE VERBAL SENSEMAKING PATTERNS OF INNOVATIVE ENTREPRENEURIAL TEAMS IN CONTEXT</b>	 <b>114</b>
<b>Finding One: These Entrepreneurial Teams are Sensemaking</b>	<b>114</b>
Result 1: Alignment is an action unto itself	116
Result 2: Meaning-making plays a large role in the act of negotiating uncertainty	119
Result 3: Share: Data dominates the Information Aggregate	122
Result 4: Utterances coded for Plan dominate the Action Aggregate	127
<b>Discussion Related to the First Research Question</b>	<b>130</b>

## **CHAPTER SIX: OBSERVATIONS FROM AN INDUCTIVE INQUIRY INTO VERBAL SENSEMAKING PATTERNS OF INNOVATIVE ENTREPRENEURIAL TEAMS ENCOUNTERING DIFFERENT TYPES OF UNCERTAINTY 134**

### **Finding Two: These Teams Have a Bi-modal Approach to Sensemaking Based on Uncertainty Type 135**

- Result 5: Action and Information utterances dominate Contest and Product conversations  
respectively 135
- Result 6: Shaping Product conversations with constricting forms of Information exchange (Vision,  
Resource, and Brainstorm) 136
- Result 7: Shaping Product conversations with utterances coded for Meaning: Disregard 145
- Result 8: Shaping Contest conversations with utterances coded for Meaning: Seek: Opinion 147
- Result 9: Shaping Product conversations with utterances coded for Action: Influence 150

### **Discussion Related to the Second Research Question 153**

## **CHAPTER SEVEN: OBSERVATIONS FROM AN INDUCTIVE INQUIRY INTO VERBAL SENSEMAKING PATTERNS OF INNOVATIVE ENTREPRENEURIAL TEAMS IN RELATION TO CONTEST RANKING 156**

### **Finding Three: The Use of Flexible (or Inflexible) Language Forms Differentiate the High- and Low-Performance Teams in this Study 156**

- Result 10: The high- and low-performance team favored Action and Information language  
respectively 156
- Result 11: Utterances coded for Information: Share: Vision and Share: Brainstorm are exclusively  
used by the low-performance team and mostly occur in Product Episodes 158
- Result 12: Utterances coded for Information: Seek: Check and Reveal: Lack of knowledge are  
used more frequently by the high-performance team 158
- Result 13: Utterances coded for Meaning: Disregard are used exclusively by the low-performance  
team 162
- Result 14: Use of Claiming language differs in the high- and low-performance teams 162
- Result 15: Utterances coded for Action: Influence are used only by the low-performance team 168
- Result 16: Utterances coded for Action: Levity are used more frequently by the high-performance  
team 168
- Result 17: Utterances coded for Action: Suspend are used only by the high-performance team  
169

### **Finding Four: Equality of Contributions Differ between the High- and Low-performance Team in this Study 172**

- Result 18: Contributions of words, questions, and language forms are more evenly shared  
between members of the high-performance team 172

### **Discussion Related to the Third Research Question 175**

## **CHAPTER EIGHT: GENERAL DISCUSSION 178**

### **Review of the Findings 178**

Conversational Competencies	179
Entrepreneurial Innovation and the Language of Sensemaking	181
Mindful Approaches to Entrepreneurial Innovation and the Language of Conditionality	182
Entrepreneurial Innovation teams are Sensemaking – and High-Performance Teams are Resilient	185
Entrepreneurial innovation is an Adaptive Learning Challenge Enabled by Reflective Dialogue	190
Alternative Approaches to Analysis and Interpretation	196
<b>CHAPTER NINE: AN EMERGING THEORY OF ENTREPRENEURIAL STANCES TOWARD UNCERTAINTY</b>	<b>199</b>
Provisional Model for Entrepreneurial Innovation Approaches to Uncertainty	202
<b>CHAPTER TEN: FUTURE DIRECTIONS AND CONCLUDING REMARKS</b>	<b>207</b>
Restatement of Major Findings and their Meanings	208
Empirical Contribution	210
Methodological Contributions	211
Theoretical Contributions	212
Limitations of the Research	214
Future Directions for Entrepreneurial Innovation Research	214
Practical Applications	216
Closing Comments	218
<b>APPENDICES</b>	<b>219</b>
Appendix One: Code Book	219
Appendix Two: Jeffersonian Notation Chart	222
Appendix Three: Recent MIT \$100K Winners and their Trajectories	223
Appendix Four: Ethical Approval Form	224
<b>REFERENCES</b>	<b>228</b>

## LIST OF FIGURES

Figure 2.1: Causal and Effectual Models of Entrepreneurship .....	29
Figure 3.1. Shane’s Model of the Entrepreneurial Process .....	50
Figure 3.2. Sarasavathy’s Entrepreneurial Effectuation Process.....	51
Figure 3.3. The Lean Startup Learning Cycle.....	59
Figure 5.1. Total Information, Meaning, and Action Utterances for All Teams Combined .....	115
Figure 5.2. Distribution of Information, Meaning, and Action Utterances for Both Teams Combined .....	115
Figure 5.3. Meaning Utterances for Both Teams Combined .....	119
Figure 5.4. Information Utterances for Both Teams Combined .....	123
Figure 5.5. Total Action (without Align) Utterances for Both Teams Combined...	127
Figure 6.1. Aggregate Codes (using Action without Align) for Both Teams by Uncertainty Type.....	136
Figure 6.2. Information Primary Codes for Both Teams by Uncertainty Type .....	137
Figure 6.3. Meaning Primary Codes for Both Teams by Uncertainty Type.....	145
Figure 6.4. Action Primary Codes (without Align) for Both Teams by Uncertainty Type.....	149
Figure 7.1. Total Information, Meaning, and Action (without Align) Utterances by Team.....	157
Figure 7.2. Information, Meaning, and Action (without Align) Utterances by Team and Uncertainty Type.....	157
Figure 7.3. Total Information Utterances by Team .....	158
Figure 7.4. Total Information Utterances by Team and Uncertainty Type .....	159
Figure 7.5. Total Meaning Utterances by Team .....	163
Figure 7.6. Meaning Utterances by Team and Uncertainty Type .....	163
Figure 7.7. Total Action (without Align) Utterances by Team.....	169
Figure 7.8. Total Action (without Align) Utterances by Team and Uncertainty Type .....	170
Figure 7.9. Proportion of Word Count by Team Member.....	172



Figure 7.10. Proportion of Word Count by Team Member and Episode Type .....	173
Figure 7.11. Distribution of Utterances Coded for Direct Questions by Team Member.....	174
Figure 7.12. Distribution of Utterances Coded for Information, Meaning, and Action by Teams and Member.....	174
Figure 8.1. Literature-based Associations between Language Forms and Resilience in Conjunction with this Study's Codes.....	187
Figure 8.2. Positive and Negative Impact of Utterances on Improvisation by Team Usage .....	189
Figure 8.3. Positive and Negative Impact of Utterances on Attitudes of Wisdom and Doubt by Team Usage .....	189
Figure 8.4. Positive and Negative Impact of Utterances on Heedful Relating by Team Usage .....	190
Figure 9.1. Entrepreneurial Approaches to Uncertainty.....	203

## LIST OF TABLES

Table 3.1. Description of Teams.....	70
Table 3.2. Integration of Sensemaking Literature and Codes .....	80
Table 3.2. – <i>Continued</i> --.....	81

## LIST OF PLATES

Plates 4.1 and 4.2: Images of the MIT Trust Center’s Pirate Sticker and Logo .....	91
Plate 4.3: Accelerate Contest logo and related image.....	93
Plate 4.4: Building E51, the Tang Center .....	95
Plate 4.5: Accelerate Contest Finale at Morss Hall .....	101
Plate 4.6: Table at the Demo Show .....	103

## ACKNOWLEDGEMENTS

The Innovation and Service Research Group at Exeter made it financially and physically possible for me to be a second-career, trans-Atlantic doctoral student. I am grateful in particular to Andi Smart. Without his vision and flexibility I might not have begun the program, and I doubt I would have finished it. I am also grateful to Adrian Bailey. Whether he was in the role of teacher, mentor, or advisor, Adrian's wisdom and generosity helped me navigate a variety of challenges. My experience at Exeter was enriched by interactions with many other people including: Allen Alexander, Kyle Alves, Francine Carter, Dee Clayton, Anne O'Brien, Steve Pearce, Caroline Rook, Dave Smith, and Mike Williams.

People at several other universities contributed to my ability to do this work. At Pennsylvania State University, Susan Gayle Strauss welcomed me into the activities of the Department of Applied Linguistics. I am thankful to her and Derron Bishop for helping me hone my abilities as a qualitative researcher with a specific interest in language. At MIT, Fiona Murray helped me to begin a partnership with the Accelerate Contest. Bill Aulet and Ben Israelite at the Trust Center along with Alice Francis and Adam Borelli made the partnership work. I am thankful to each of them. And, of course, I am grateful to the teams who participated in the research.

My gratitude also goes out to Michelle Barton and Anne Donnellon. Hearing their perspectives on this research gave me the confidence I needed to continue.

My interest in doing doctoral work in entrepreneurship began long before I matriculated in a program. I am thankful to the many colleagues, friends, and loved ones who have inspired and encouraged me throughout those years: Jeff Behrens, Tom Black, Candy Brush, Ernst de Flines, Steve Herbert, Geoff Knauth, Valdur Koha, Ceasar McDowell, Peter Schmidt, Florence Sender, David B. Silberman, Jr., Sam Silberman, Suresh Subramanian, Noam Wasserman, Throop Wilder, and Howard Zaharoff.

Lastly, I am appreciative of the enduring support of my family. My father, Glenn Campbell, encouraged me to engage in the research that has culminated in this dissertation and degree. I am thankful for his unwavering belief in my abilities. He along with my mother, Barbara Campbell, and my grandparents helped me to establish a wide array of interests and to enjoy the experience of lifelong learning. I am indebted to them all for these gifts.

## CHAPTER ONE: OVERVIEW

Starting a venture is full of uncertainty, as the following excerpt from this study's field notes suggests:

*"It's not gonna work!" Seth says in an overly-dramatic tone of voice as if he were shocked or horrified. He and his business partner Shahrnaz dissolve into a burst of laughter. They are talking about the early-stage venture that they are building. While they speak they are sitting in her living room and preparing for the final round of judging in a university-sponsored contest for entrepreneurial teams. When Shahrnaz recovers her composure she offers a more serious reflection: "One thing that one of the early round judges gave in the feedback was that they don't think that we're going to sell that many [units of our product]." Seth overlaps her statement with, "Yeah, there is always that..." She then matches his words with her own, "Right; there is always that – there is always that risk." After articulating how their sales will depend somewhat upon their go-to-market strategy and other factors she confesses to him that, "I just... I have a hard time seeing [the judge's point of view] given like all the like anecdotal and data we have to confirm the market." Seth agrees that the information they've gathered about the market for their product seems to conflict with the judge's perceptions. After a short pause he asks Shahrnaz, "But we'll worry about that later, right?" She concurs without hesitation, "Yeah. Agreed" – and the conversation continues. They have a product demonstration to prepare and an elevator pitch to practice in the hours that remain before the final judging.*

Marked by setbacks and mid-course corrections, the startup process is rarely, if ever, linear. Early-stage high-tech entrepreneurs, such as the ones in the aforementioned scenario, often alter their product concepts. Teams may radically depart

from their original idea (J. Sorensen & Chang, 2006) in their quest to define the synthesis between the founding team's vision and the simplest product that a customer base will accept (Reis, 2011, p. 50). This process of crafting a minimum viable product is iterative, interpretive, and social (Reis, 2011).

Indeed, creating a minimum viable product can be difficult. Entrepreneurial ventures are steeped in uncertainty by their very nature (Hill & Levenhagen, 1995; Knight, 1921; McMullen & Shepherd, 2006), and those defining conditions may hinder an entrepreneurial team's ability to interpret their experiences and make essential changes to their product or strategy (McKelvie, Haynie, & Gustavsson, 2011). Sorting through the possible interpretations of a given situation (Blatt, 2009), and knowing the questions to ask or the next steps to take (Amason, Shrader, & Thompson, 2006) can pose serious challenges to an entrepreneurial team. Moreover, entrepreneurial teams can become attached to a particular vision for a venture and reluctant to make changes that could disrupt any alliances that have already started to form (Nobel, 2011).

Consequently, only some entrepreneurial teams seem to be able to engage in the iterative learning tasks of a new venture, emerge with a minimum viable product, and eventually achieve market success. Other teams – perhaps most given the high failure rate of new ventures (Shane, 2008; Timmons, 1994) – may engage in the process but fail to find the critical intersection of product vision and market acceptance necessary for the earliest phase of entrepreneurial ascendancy. This fact – that some entrepreneurs succeed while many do not – has driven a dominant and enduring stream of research into the factors that enable entrepreneurial success (Aldrich & Martinez, 2001; Eesley & Roberts, 2012; Hmieleski, Corbett, & Baron, 2013), including inquiries into entrepreneurial cognition.

While some of the existing entrepreneurial cognition literature affords founders an active role in the shaping of entrepreneurial opportunities (Alvarez & Barney, 2007; Baker & Nelson, 2005; Baron, 2007) and acknowledges the use of sensemaking (Barton, 2010; Cornelissen & Clarke, 2010; Hill & Levenhagen, 1995; Wood & McKinley, 2010) and conversations (Amason et al., 2006; Baron & Markman, 2000;

Dyer, Gregersen, & Christensen, 2008; Felin & Zenger, 2009; Lechler, 2001) in the process of early-stage entrepreneurial innovation, it fails to explain *how* an entrepreneurial team's members negotiate the uncertainties and demands of innovating as their shared situation unfolds. It fails to show how they verbally make sense of disruptive input about their original product vision and collaboratively construct a minimum viable product. By studying the language teams use to make sense of the uncertain circumstances that accompany the entrepreneurial innovation process, insights into entrepreneurial cognition – including entrepreneurial stances toward uncertainty – could be gained.

Inquiries into the ways that early-stage entrepreneurial teams conversationally make sense of contextual cues as they craft their minimum viable products could address gaps in the entrepreneurial cognition literature related to opportunities and, by extension, to success. Research on verbal interactions in other workplace settings – doctor's offices, classrooms, and courtroom, etc. – has revealed how the goals of establishing diagnoses, teaching lessons, and reaching verdicts, for example, are conversationally accomplished (Atkinsen & Drew, 1979; Cazden, 1988; Drew & Heritage, 1992; Heritage & Maynard, 2006; Middleton, 1997). Moreover, distinct verbal patterns in the interactions of successful (or unsuccessful) teams working in uncertain conditions marked by high-stakes, limited resources, and changing conditions have been identified (Edmondson, 2003; Morgan, Glickman, Woodard, Blaiwes, & Salas, 1986; Neville, 2004a; J. B. Sexton & Helmreich, 2000, 2003; J. B. Sexton et al., 2006). Few micro-analytical studies of the verbal patterns of innovative entrepreneurial teams exist despite requests for more research into entrepreneurial action; into the detailed ways that entrepreneurial teams enact their work (Bird & Schjoedt, 2009; Cornelissen, 2012; Gartner, 1988).

This project fills that gap; it examines how entrepreneurial teams competing in a lean startup contest verbally accomplish the work of crafting a minimum viable product. Because “team work is essentially a linguistic phenomenon” (Donnellon, 1996, p. 6), this project explores how entrepreneurial team mates naturally talk with each other in real-time as they attempt to build and refine innovative products

based on input from prospective customers and advisors. It considers how each team verbally makes sense of disruptive data in their efforts to build a minimum viable product. By examining the detailed verbal interactions between team mates and comparing the language patterns of a high- and low-performance team, the study aims to identify any “interactional competencies” (Cazden, 2011; Nevile, 2004a, p. 2; Psathas, 1990a, p. 21) that may be required of early-stage innovative entrepreneurial teams. Moreover, this project with its emphasis on observable sensemaking language is designed to study entrepreneurial stances toward uncertainty – and how verbal interactions and uncertainty stances might relate to entrepreneurial success.

Findings from this inductive qualitative inquiry show that these entrepreneurial innovation teams use sensemaking language when navigating uncertainties. The micro-analysis of the teams’ combined utterances produced a general pattern of sensemaking language: 24% of the verbal contributions were devoted to the exchange of Information, 42% were given to the ascription of Meaning, and 33% were focused on the articulation of Action.

This general verbal sensemaking pattern was slightly different from the patterns that emerged when the type of uncertainty was considered. When these teams were navigating contest-related uncertainties the combined conversations were comprised of 11% Information, 43% Meaning, and 44% Action utterances. When these teams were faced with uncertainties related to the crafting of their minimum viable products, the conversations were comprised of 36% Information, 42% Meaning, and 22% Action utterances. This could be evidence of teams using a causal approach to contest-related uncertainties and an effectual approach to product-related uncertainties.

The patterns of the high- and low-performance teams also differed from each other. The general pattern for the high-performance team’s conversations was comprised of 12% Information, 39% Meaning, and 49% Action utterances. In contrast, the low-performance team’s conversations consisted of 33% Information, 44% Meaning, and 23% Action utterances. It is worth highlighting that the percentages



of utterances coded for Information and Action vary but those coded for Meaning stay relatively constant regardless of the target of the analysis. The interpretative work of making meaning – of making sense of situations – appears to be the central task of these entrepreneurial innovation teams. At more granular levels of observation, the high-performance team tended to use more flexible language forms (e.g. conditional claims, levity, etc.) that can protract the interpretive process. Such language forms have been associated with mindfulness, resilience, and reflection. In contrast, the low-performance team tended to use more rigid and definitive language forms (e.g. absolute claims, persuasion, etc.) that might sacrifice the possibility of productive (re)interpretation.

Given the exploratory nature of this research, conclusions must be drawn with caution. However, the findings suggest that verbal sensemaking behaviors such as mindfulness, resilience, and reflection are present in the entrepreneurial innovation process and may differentiate high- and low-performance teams. The findings suggest that conversational competencies such as the use of conditional framing might enhance an entrepreneurial team's capacity for innovation success. And they suggest that entrepreneurial stances toward uncertainty may be more varied than current theory states. The high-performance team's tendency to expand uncertainty through their language – to avoid premature cognitive commitments and explore alternative possibilities – is not well represented in the dimensions of prediction and control that are central to the current theories of effectuation and causation. This research offers a provisional theory that unites and enhances the existing theories; it offers expansion as another productive entrepreneurial stance toward uncertainty. In essence, this research argues that every successful startup is a conversational accomplishment.

## **The Structure of the Document**

The following chapters are intended to provide readers with the necessary scaffolding to understand the context, design, and results of this doctoral research project.

Because the aim of this research is to offer exploratory theory about the conversational competencies of early-stage entrepreneurial innovation teams, some chapters report on the execution of three nested objectives:

1. The development of codes to represent the verbal utterances of entrepreneurial teams engaged in the innovation of minimum viable products;
2. The examination of language patterns as suggested by these codes within and across teams;
3. The identification of language patterns, if any, that appear to differentiate high- and low-performance teams.

Material relevant to the first objective is addressed most extensively in Chapter Three. The basic language patterns that emerge from these codes are reported in Chapters Five and Six. And the language patterns that appear to be related to performance are reported in Chapter Seven.

In general, the early chapters of this document summarize the theoretical underpinnings, specific context, and methodological approach for the research. Chapter Two reviews the relevant features of the entrepreneurship literature. It pays close attention to the work in entrepreneurial cognition. It also imports relevant work from the sensemaking literature and segues into an overview of research related to institutional talk. It concludes with an articulation of the limitations of the existing literature on entrepreneurial cognition and a set of three Research Questions. Chapter Three describes the philosophical orientation that animates this research. It articulates the research design and explains the methodological traditions of Conversation Analysis (CA) and ethnography. It includes an overview of the data collection and analysis processes. After presenting descriptions of the codes built for this inquiry and examples of the coded data it closes with an acknowledgement of possible weaknesses in this study's design. The fourth chapter presents an ethnographic portrait of the context from which the teams in the study are drawn and in which they conduct their work. It also foreshadows some elements of conversation – such as reflective dialogue – that emerge organically from the analysis of the recorded data from the teams.

Chapters Five, Six, and Seven showcase salient findings within and across teams; findings that have come from the investigation of the project's three guiding questions. Each chapter includes data and discussion points. Chapter Eight, a synthesizing chapter, integrates the findings and discussion points from the three previous chapters in a general discussion about the conversational competencies of innovative entrepreneurial teams. Chapter Nine offers a provisional theory of entrepreneurial stances toward uncertainty. Chapter Ten links the findings and the provisional theory that have emerged from this inquiry to possible implications for practice and to directions for future research. The document concludes with a set of relevant appendices and a full bibliography.

Because only a few readers may have had first-person experience as part of a founding team or experience with the notation conventions of Conversation Analysis, a variety of styles are used to present data throughout the document. To familiarize readers with the workplace setting of the studied teams, an ethnographic portrait is offered in Chapter Four. Excerpts from the teams' conversations are presented sometimes in a journalistic style. An example of this style, which combines quotes with contextual description, can be found at the start of this chapter. An alternative presentation style – charts that report coding assignments on an utterance-by-utterance basis – is used if the excerpt has already been treated in narrative form to make a different point or if the excerpt does not require contextual elements to be well understood. Descriptive statistics also are used to convey and compare the contours of the teams' conversational activities. In all excerpts from the intra-team conversations, the names of the teams and the individuals have been changed. The intent behind the use of this array of presentation styles is to make the research and its findings accessible to many readers from diverse backgrounds and areas of interest.

## **CHAPTER TWO: THEORETICAL FOUNDATIONS**

This chapter begins by defining the people and structures that are relevant to the research. It continues by describing the entrepreneurial cognition literature, especially that which grapples directly with questions of entrepreneurial opportunity creation and success. The sensemaking literature, especially as it relates to workplace interaction, is referenced to illuminate effective ways to approach an inquiry into the processes that enable innovative entrepreneurial team work. The chapter concludes with a statement of the gaps in the literature and a set of research questions.

### **Defining Innovative Entrepreneurs and Their Work**

Entrepreneurs innovate products and services, create jobs, and generate wealth; in short, the global economy is dependent upon people becoming successful entrepreneurs (Dutta & Crossan, 2005; Schramm, 2011). However, defining entrepreneurship is not an easy task. Sometimes associated with self-employment (Shane, 2008; Stevenson, 1983), small business (Gibb, 1996), efforts within a large, existing company (Pinchot, 1986), franchising (Azoulay & Shane, 2001), and venture-backing (Beckman, Burton, & O'Reilly, 2007), the definition of entrepreneurship continues to undergo revisions. Even though the entrepreneurship title has been given to anyone who starts a new venture of any kind (Lazear, 2004), drawing a distinction between innovative and imitative entrepreneurial endeavors is meaningful (Aldrich & Martinez, 2001; Baumol, 1986; Cliff, Jennings, & Greenwood, 2006) if only because most entrepreneurs do not start innovative ventures (Bhide, 2000). It is innovative entrepreneurship – the study of founders who originally envision the possibility for a new venture with a distinctive value proposition (e.g., product features, pricing models, customizability, etc.) as described by Dyer, Gregersen, and Christensen (2008) – that will be referenced in the following exploration.

Although entrepreneurship is often associated with individual aspirations and achievements, most successful new ventures are started by teams (Gartner, Shaver, Gatewood, & Katz, 1994; Kamm, Shuman, Seeger, & Nurick, 1990; Lechler, 2001; Timmons, 1989). The terms founding team and entrepreneurial team tend to be used as synonyms in the literature (Brush, 2007) even though founders tend to have a different relationship with the venture: they can form strong bonds with the venture (Cardon, Zietsma, Saporito, Matherne, & Davis, 2005) and leave a lasting imprint on its culture (Beckman & Burton, 2008; Burton & Beckman, 2007; Schein, 1983). While this research will tend to use the term entrepreneurial team, the team members are founders who have been present on the team before the formal incorporation of the venture (Kamm et al., 1990).

All entrepreneurial teams, innovative or imitative, must complete essential tasks associated with new venture creation (Aldrich & Martinez, 2001; Gartner, 1985; Low & Abrahamson, 1997), and through these activities entrepreneurship emerges over a period of time (Gartner et al., 1994). Organizing tasks -- such as incorporating or raising capital -- are important activities for entrepreneurs to accomplish. However, these functional acts associated with the creation of a new venture are related to but distinct from the actions required to innovate a new product that will differentiate the venture and contribute to its ascendancy. Organizing and innovating efforts can be undertaken in a non-linear, iterative manner by the entrepreneurial team (Brush, Manolova, & Edelman, 2008). It is the act of innovating, not managing early-stage operational challenges of the venture, which will be emphasized in this work. However, some basic tasks of organizing such as funding, growth in team, and growth in customer base or revenues are used as the metrics for success for early-stage ventures (Beckman et al., 2007; Edelman, Brush, Manolova, & Greene, 2010; Newbert, 2005; Song, Podoyntsyna, Van Der Bij, & Halman, 2008). These metrics inform the judging criteria used in the innovative entrepreneurial competition which is the context for this study, and judges' ranking of the teams are used in this research as a proxy for each team's relative success.

Teams in general warrant a brief definition and description: a team can be defined as, “a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for which they hold themselves mutually accountable” (Katzenback & Smith, 2005). The structural features that enable teams to accomplish their work successfully may include: (Hackman, 2002; Wageman & Gordon, 2005):

- A defined membership with interdependent roles and tasks;
- A mobilizing purpose with articulated challenges;
- Task design and behavioral norms that facilitate collaboration;
- A supportive organizational environment with appropriate resources and rewards;
- Access to meaningful coaching and expert guidance.

A desire to discover the structural conditions that might enable entrepreneurial teams in particular to succeed at their work has inspired studies of funding profiles, team size and composition, and network diversity.

Entrepreneurial teams with funding from top-tier venture capital firms have been shown to enjoy greater levels of market success than teams funded by other means (Gompers, Kovner, Lerner, & Scharfstein, 2010; Hochberg, Ljungqvist, & Lu, 2007; M. Sorensen, 2007). Consequently, raising venture capital tends to be considered a significant milestone, a source of pride, and a harbinger of success for entrepreneurial teams. Early stage ventures funded by Angels – high net-worth individuals who invest seed-level funds – are more like to be able to raise venture capital in future rounds; perhaps in part because of the network benefits that the Angels can provide (Kerr, Lerner, & Schoar, 2010).

The composition of the founding team may matter to a startup’s eventual success. Team size has been linked to performance (Eisenhardt & Schoonhoven, 1990; Roberts, 1991) and growth (Cooper & Bruno, 1977; Feeser & Willard, 1990) with larger teams thought to be more capable in dynamic business environments

(Haleblian & Finkelstein, 1993). This increased capacity of larger teams has been attributed to the greater information-processing abilities and additional viewpoints that can emerge when people work together. However, some research comes to a different conclusion: larger teams have more internal conflict (Amason & Spienza, 1997), and large team size can have a negative impact on growth (Koeller & Lechler, 2006). One possible explanation for this diminished capacity is that the frequency of informal and familiar interactions between the team members decreases as the team size increases; making it more difficult to coordinate shared behaviors and actions (Hambrick, 1994).

Beyond size, another key area of study has been diversity within the entrepreneurial team in terms of experience and areas of expertise. More homogenous teams may demonstrate rapid decision-making behavior and streamlined execution (S. L. Brown & Eisenhardt, 1997; Eisenhardt & Schoonhoven, 1990). Functional diversity – having people with appropriate technical skills, business skills, and such – and prior industry experience may bode well for a venture's future success (Beckman et al., 2007). Functional diversity may matter because entrepreneurial teams must accomplish a wide array of tasks requiring different skill sets. Industry experience may empower founders with a better sense of market needs and a richer network of relevant contacts. If members of a founding team have diverse knowledge, the full array of necessary skills, and the capacity to execute efficiently, research suggests that they could be a likely candidate for success (Beckman & Burton, 2008; Eisenhardt & Schoonhoven, 1990).

Diversity in the social networks of the entrepreneurial team members has also been explored by researchers. Entrepreneurs tend to belong to more diverse networks than non-entrepreneurs (Renzulli, Aldrich, & Moody, 2000; Stuart & Ding, 2006). Having a diverse social network might enable entrepreneurs to fill in knowledge gaps and harness resources including funding (Burt, 1992; Guimera, Uzzi, Spiro, & Nunes Amaral, 2005; Stuart & Sorenson, 2007). Plus, participation in

a large number of different external groups by individual team members may facilitate the cross-fertilization of knowledge (Reagans & McEvily, 2003).

Even though these streams of research have provided rich information about the structural features of entrepreneurial teams they are not designed to investigate the dynamic work that entrepreneurial teams do. Other research, especially that which springs from recent inquiries into entrepreneurial cognition, has begun to consider the experiences of entrepreneurial teams as actors with agency in the crafting of opportunities that lead to their success.

### **Relevant literatures**

The roots of the entrepreneurial literature reach back at least as far as the economics work of Schumpeter in the early part of the 20<sup>th</sup> century. In his view opportunities arise from a disruption to the existing market (Schumpeter, 1942). Viewing the 1990's internet boom through this lens would suggest that the US Telecommunications Act of 1996 (FCC, 1996) dramatically altered the competitive landscape, and that entrepreneurs captured the opportunities that resulted from deregulation by introducing new products and new types of products. The ensuing decline of some established businesses and the rise of new ventures would be described as a vital source of "creative destruction." By contrast, Kirzner (1997) would understand the introduction of the new telecom-related and internet-protocol-based ventures as a means of repair; alert entrepreneurs found imbalances in the market, and their contributions returned the economic system to equilibrium. In both schools of thought, entrepreneurial opportunities are located outside of the human realm; they are objective and static occurrences that exist in an unpeopled, abstract dimension waiting to be recognized or discovered by entrepreneurs.

### **Entrepreneurial Cognition**

Like the economics-oriented literature, some of the research into entrepreneurial cognition has situated opportunities outside of the person. For example, the so-



called “discovery” and “recognition” models for understanding entrepreneurial opportunity assign a matchmaking role to entrepreneurs (Alvarez & Barney, 2007). In these frameworks opportunities are considered to be unchanging, fully-formed entities, and entrepreneurs are seen to be responsive to opportunities but not responsible for the cultivation of them. With opportunities and entrepreneurs seen through this lens, researchers have been inspired to explore the question of why some people can find or exploit opportunities better than others (Shane, 2003). These inquiries have shown that entrepreneurs may be more likely to harbor biases for over-confidence and representativeness (Busenitz & Barney, 1997; Palich & Bagby, 1995) and less likely to hold a status-quo bias (Dyer et al., 2008) than non-entrepreneurs. Other research has shown that experienced entrepreneurs may differ from novice entrepreneurs in their ability to identify patterns in a complex or seemingly unrelated set of events (Baron & Ensley, 2006). However, despite the cognitive differences that have been identified, this line of research has been unable to explain how these differences are actively expressed in the daily work of an entrepreneurial team; how, for example, the cognitive practices of entrepreneurial team members would inform their ability to successfully craft a minimum viable product.

An alternative framework – the Creation Model, as it has come to be called by many – assigns an agentic role to entrepreneurs in the crafting of opportunities (Alvarez & Barney, 2007; Baker & Nelson, 2005; Bhidé, 2000; Dyer et al., 2008) and views entrepreneurship as a process, not an event (Aldrich & Ruef, 2006). In the Creation Model neither the innovative product nor the market need exist in advance of an entrepreneur’s insight and effort. Seen through this constructivist lens, opportunities are made or at least influenced by the actions – including the “imagination, inspiration, and protracted endeavor” – of entrepreneurs (Sarasvathy, 2001, p. 261). This shift – the assignment of agency to entrepreneurs – implies that initial actions taken by an entrepreneur may or may not result in the creation of an innovative product that meets market acceptance (Wood & McKinley, 2010). By extension, this shift suggests that entrepreneurs can act not only once but multiple times

during the process of innovating (Alvarez & Barney, 2007; Fletcher & Watson, 2007; Lobler, 2006). As they take action and make adaptations over time, entrepreneurs may be simultaneously refining their opportunity and their emerging innovation by learning from experience, incorporating feedback and advice, and accommodating new knowledge or unexpected changes in their circumstances (Barton, 2010; Gemmell, Boland, & Kolb, 2012; Hill & Levenhagen, 1995; Van de Ven & Polley, 1992). Moreover, when opportunities are seen to be influenced by the efforts of entrepreneurs, new questions can be asked that explore the factors inherent in an entrepreneurial “opportunity refinement competency” (Rasmussen, Mosey, & Wright, 2011) that helps a team find the nexus between the products the market will accept and the products the team can build. Questions can be asked about the relationship between an entrepreneurial team’s specific behaviors and their ability to accomplish the primary goal that orients their work – the crafting of a minimum viable product.

It may be important to distinguish opportunities from innovations and outline the vital interplay between the two. Entrepreneurial opportunities emerge through, “a process that involves intense dynamic interaction and negotiation between stakeholders seeking to operationalize their (often vague and unformed) aspirations and values into concrete products, services and institutions that constitute the economy” (Sarasvathy, Dew, Velamuri, & Venkataraman, 2005, pp. 156-157). In other words, entrepreneurial opportunity results from a special combination of product innovation and market need (Trott, 2002). Competent entrepreneurs must be attuned to both the development of the innovation and the dynamics of the market (Park, 2005), and innovations emerge from “a highly social process in which the collective dimension plays a crucial role” (Peschl & Fundneider, 2008, p. 16).

While the “dynamic interaction” between entrepreneurs and other stakeholders is not exclusively defined by interpersonal conversation, conversations (Gemmell et al., 2012) and team meetings (Reis, 2011, p. 168) do provide a context for entrepreneurial teams to refine and ultimately define their minimum viable products. In these meetings, the participants can vet their assumptions about the acceptance

and growth potential for their venture by trying to find the possible intersection(s) between their vision for an innovation and the data they have about the market's behavior. Or in other words, they can integrate the theory they hold about their product and the market with the evidence recently gathered from the field. Over the course of a meeting, the "process of reasoning and justification then moves ideas from the realm of conjecture and possibility to increasing certainty of belief and intent about what a nascent organization might actually do" (Felin & Zenger, 2009, p. 138). These meetings and their constitutive conversations will be referred to as Validation Conversations in this document.

Little is known about the details of the interactions that enable effectuating entrepreneurial teams to "redefine the designs of their solutions" (Sarasvathy, 2008, p. 186). However, through their ongoing actions and interactions – witnessing customer behaviors, interpreting the meaning of those experiences, and updating their innovation and strategy to honor that input – a team manages to enact an opportunity (Gartner, Carter, & Hills, 2004) through some effectual means. By using "social interactions as part of a cycle of learning and experimentation" (Gemmell et al., 2012, p. 1064) teams may be engaging in acts of entrepreneurial sensemaking as they gather information, interpret its meaning, and take actions that lead to an outcome with a measurable performance level (Thomas, Clark, & Gioia, 1993, p. 240).

### Sensemaking

Sensemaking is a collaborative process used by teams to understand their shared situation. When engaged in the act of sensemaking, team members interpret their social context as it unfolds by extracting cues and infusing them with (sometimes temporary) meaning. The process of sensemaking transforms shared "circumstances into a situation that is comprehended explicitly in words and that serves as a springboard into action" (Weick, Sutcliffe, & Obstfeld, 2005, p. 1); the words offering a window into the cognition of team members as they verbally form and reform their interpretations of the shared situation (Cornelissen & Clarke, 2010, p. 541;

Donnellon, 1986). Because it is inherently social, sensemaking often occurs as a result of a situated conversation among team members. In fact, some research suggests that conversations among peers is the primary means by which sense-making happens (Roberson, 2006).

Teams are sensemaking constantly (Rawls, 2008). However, teams become aware of the act of sensemaking when faced with disruptive, uncertain, or ambiguous circumstances (Weick, 1995) – the standard conditions of work within entrepreneurial contexts (McKelvie et al., 2011; Sarasvathy, 2001). Classic organizational theory suggests that uncertainty arises from perceptions about the environment (Milliken, 1987), and, according to Weick (1995, p. 14), sensemaking starts with the question, “is it still possible to take things for granted?” When the answer is no, teams must begin the task of making meaning by synthesizing cues from their immediate experience with frames from their past experiences. When a cue fits within existing frames, meaning-making tends to go unnoticed, and action tends to proceed without interruption. However, when a cue contrasts with expectations held within existing frames, teams attempt to socially construct an interpretation of that cue that will enable them to resume a course of action. In other words: sensemaking presumes that meaning emerges through social interaction (Weick et al., 2005) and that meaning-making and action in and on the environment are reciprocally linked (Weick, 1979). The action taken, of course, may generate new cues that again require interpretation and inspire additional action.

When considered from an entrepreneurial perspective, the frames and cues of sensemaking could animate the Validation Conversations of teams striving to craft a minimum viable product. When cues from the marketplace contradict an entrepreneurial team’s initial vision for a product – their pre-existing frame – the team could enter a phase of conscious sensemaking. (This phenomenon also has been referred to as “sensebreaking” (Kaffka, Singaram, Kraaijenbrink, & Groen, 2013).) Once the meaning(s) of the new cues have been at least temporarily interpreted, action – perhaps to test a new theory of the product-market intersection – can resume. In short, the grounded and dynamic interpretation of uncertain situations that

constitutes sensemaking seems to be compatible with the process associated with crafting a minimum viable product.

Existing theories of entrepreneurial cognition – especially those of effectuation and causation (Read, Song, & Smit, 2009; Sarasvathy, 2001; Sarasvathy & Dew, 2005) – grapple with the stance entrepreneurs take toward uncertainty. These theories hinge largely on ideas about control and prediction (Sarasvathy, 2001). (See Figure 2.1.) In an effectual explanation of entrepreneurial opportunity the logic is: we don't need to predict the future if we can control it. In a causal explanation the logic is the reverse: we don't need to control the future if we can predict it. However, neither theory affords a strong possibility that the entrepreneurial innovation process is not located along a control-prediction continuum. In particular these theories overlook the possibility that entrepreneurs might intentionally extend or expand a state of uncertainty during the entrepreneurial innovation process; that they might deliberately protract (or otherwise increase) their experiences of uncertainty during the interpretive, meaning-making processes of sensemaking.

Figure 2.1: Causal and Effectual Models of Entrepreneurship

Categories of Differentiation	Causation Processes	Effectuation Processes
Givens	Effect is given	Only some means or tools are given
Decision-making selection criteria	Help choose between means to achieve the given effect Selection criteria based on expected return Effect dependent: Choice of means is driven by characteristics of the effect the decision maker wants to create and his or her knowledge of possible means	Help choose between possible effects that can be created with given means Selection criteria based on affordable loss or acceptable risk Actor dependent: Given specific means, choice of effect is driven by characteristics of the actor and his or her ability to discover and use contingencies
Competencies employed	Excellent at exploiting knowledge	Excellent at exploiting contingencies
Context of relevance	More ubiquitous in nature More useful in static, linear, and independent environments	More ubiquitous in human action Explicit <i>assumption</i> of dynamic, nonlinear, and ecological environments
Nature of unknowns	Focus on the predictable aspects of an uncertain future	Focus on the controllable aspects of an unpredictable future
Underlying logic	To the extent we can predict future, we can control it	To the extent we can control future, we do not need to predict it
Outcomes	Market share in existent markets through competitive strategies	New markets created through alliances and other cooperative strategies

Source: Sarasvathy (2001, p. 251)

The organization and innovation literatures beyond the entrepreneurial scope have found that interpretive practices can improve innovation success (Lester & Piore, 2004; Michel & Wortham, 2009). Michel and Wortham (2009), for example, suggest that organizations capable of successfully innovating are guided not by practices that reduce uncertainty, as most management literature would recommend, but by practices that enhance it. According to their research, teams who rely on models and abstractions – a method that can appear to both control and predict uncertain situations – could be slow to recognize indications and incorporate specific information from an uncertain situation. In other words, in their research the abstraction-oriented teams were less successful than teams who were forced to collaboratively make sense of their uncertain situations based on ongoing qualitative input from real customers in the moment.

Interpretive interactions of the kind mentioned by Michel and Wortham (2009) are, “habits of thought that allow us to make sense of radically ambiguous situations and move forward in the face of uncertainty” (Lester & Piore, 2004, p. 5). Such interpretive processes do not aim to predict or control uncertainty for the team; they aim to present a wide array of possibilities and construct new meanings from the resulting discussion. Different than typical brainstorming sessions which encourage and require contributions ungoverned by real market input (Osborn, 1957; Perkins, 2000), interpretive explorations stay connected to the authentic features of the uncertain situation (such as the customer input mentioned in the previous paragraph.) Perhaps important to note: some have suggested that most entrepreneurial ventures with the intent to innovate fail because of a premature commitment to a course of action (Furr & Ahlstrom, 2011; Reis, 2011) and not because of protracted interpretation. As Lester and Piore phrase it, those intending to innovate, “fear the paralysis of indecision more than the stillbirth of options...” (Lester & Piore, 2004, p. 49), and end up forfeiting the benefits that could have come from engaging fully in sensemaking conversations.

Some of the collaborative sensemaking literature has focused on teams in dynamic, high-stakes situations such as fire-fighting (Weick, 1993), medical contexts

(Albolino, Cook, & O'Connor, 2007; Thomas et al., 1993), and military-related environments (Kramer, van Bezooijen, & Delahaij, 2010; Weick & Roberts, 1993). This literature frequently focuses on connections between sensemaking and performance; noting a team's sensemaking practices in relationship to its success or failure. In his seminal work on sensemaking in the Mann Gulch disaster, Weick suggested that maintaining several attributes could be vital to the success of a team collaborating on critical tasks that unfold in unpredictable circumstances within limited timeframes (Weick, 1993) – the type of tasks and circumstances that define the entrepreneurial experience. The four essential attributes are: improvisation and bricolage, virtual role systems, attitudes of wisdom and doubt, and heedful interactions.

### *Improvisation and Bricolage*

Improvisation has been defined as a temporal act that occurs when design and execution of a novel action happen simultaneously (Baker, Miner, & Eesley, 2003; A.S. Miner, Bassoff, & Moorman, 2001). Those who are skilled at improvisation are said to have a variety of competencies including procedural and declarative knowledge related to the task at hand (Moorman & Miner, 1998). Implied is the idea that improvisation includes an unscripted intentionality that is distinct from random alterations to existing forms (Weick, 1996, 1998). It is set apart, however, from ideas of experimentation and rapid iteration (Austin & Devin, 2003; Anne S. Miner, Bassoff, & Moorman, 2001; Schrage, 1999; Thomke, 1998) which include concepts of deliberate testing and evaluation.

Bricolage – a practice of using available resources in novel, purposeful ways – is a term borrowed from anthropological work (Levi-Strauss, 1966). Bricolage requires a recombination of existing materials and other resources including network contacts to form something new. It emphasizes approximated success over perfection (Baker et al., 2003; Baker & Nelson, 2005).

Both improvisation and bricolage imply a kind of creativity. Creativity at the team level has been said to be enhanced by social practices that include seeking help, giving help, and adaptive framing based on reflection (Hargadon & Bechky, 2006) – all of which occur, in part, through team conversation. Similarly, the use of conditional forms of language (e.g. could be, might, if) as opposed to unconditional forms of language (e.g. must be, is) can facilitate mindful behaviors including increased creativity in novel or resource-constrained contexts (Langer, 1992; 2002, pp. 216-217). However, in highly-uncertain situations – such as the context in which entrepreneurs must work – few people are at their creative best (Amabile, Hadley, & Kramer, 2002; Weick, 1993). Instead, high-stress situations tend to cause people to cling to familiar patterns of behavior even if such reactions are not constructive (Raelin, 2001, p. 16; Snook, 2000; Weick, 1993). In fact, teams in stressful, dynamic situations tend to experience diminished task-related agility, narrowed attention, and a weakening of team cohesiveness (Driskell, Salas, & Johnston, 1999; Edmondson, 1999; Orasanu, 2005; Weick, 1993). Conversely, those teams that can respond mindfully to uncertain situations – by noticing new (and sometimes nuanced) features in the situation and creating new categories of meaning for their experiences (Langer, 1989b) – may be able to adapt and thereby achieve better outcomes (Weick, Sutcliffe, & Obstfeld, 1999).

Much of the entrepreneurship literature has minimized the role of improvisation or bricolage in the success of new ventures. Instead it tends to focus on a linear framework of planning followed by execution (Carter, Gartner, & Reynolds, 1996; Shane, 2003; Shane & Venkataraman, 2000). When concepts of improvisation or bricolage are considered in the context of entrepreneurship they are sometimes positioned only as a reactionary effort rather than a strategic act (Senyard, Powell Brown, Davidsson, & Steffens, 2013). However, “improvisational routines” can be a strategic choice for entrepreneurial teams (Baker et al., 2003). Nevertheless, improvisation and bricolage, even when used conscientiously do not guarantee resilience and high levels of performance for entrepreneurial teams; they have been shown to deliver mixed performance results (Hmieleski et al., 2013).



## *Virtual Role Systems*

In uncertain and rapidly-changing situations it is possible for a team to undergo significant changes to its personnel structures, sometimes with little warning. Key roles might become vacant or a new need may arise with no specialist available to address it. If team members share a mental model of the roles and responsibilities that enable their organization to thrive then that model can guide them even when the team undergoes change to its structure or in its circumstances. A virtual role system is part of a team's shared understanding about risks, goals, and possible actions that can guide a team to optimal performance (Weick, 1993).

The team described in Weick's account of the Mann Gulch disaster had at least three roles: leader, second-in-command, and crewmember (Weick, 1993, p. 633). The leader went first in line, assessed the situation, gave orders, and selected routes including escape routes. The second-in-command trailed the crew through the terrain and was expected to repeat the leader's orders, confirm the crew's comprehension of orders, and help the crewmembers coordinate their actions. The crewmembers' role was to follow the orders and attempt to execute the tasks related to extinguishing – and surviving – the fire. The language forms used in this example of a virtual role system were far more routinized – one person calling orders and another repeating the orders, for example – than would occur in an office-setting. However, even white-collar business meetings have language forms – sometimes called registers (Cazden, 1987) – related to role systems. For example, one person might hold the official or unofficial responsibility of facilitator if s/he tended to start and stop meetings, keep the agenda, and garner participation among other things. (Barske, 2009; Rixon, McWaters, & Rixon, 2006). Some researchers have suggested that virtual role systems are displayed by redundancy of roles within in teams (Kendra & Wachtendorf, 2003; Mallak, 1998; Wilson, 2007). This active duplication of roles might be expressed by team members using similar language forms (e.g. if multiple team members use the language of facilitation that would be evidence of a shared understanding of the facilitator role.)

In entrepreneurial contexts, the value of shared mental representations within the founding team has been explored only in a limited fashion (Grégoire, Corbett, & McMullen, 2011). The majority of the studies that do exist focus on team cohesion and conflict (Ensley & Pearce, 2001), team efficacy and intensions (Shepherd & Krueger, 2002), and consistency of strategic vision (West, 2007). However, the concept of a collective understanding of the roles and responsibilities of all team members within the emerging entrepreneurial organization does not seem to have been explored explicitly.

Similarly, the entrepreneurship literature on team disruption – the exit of a founder, for example – tends to be organized around two themes. The literature either explores the reasons behind a founder's departure (Boeker & Karichalil, 2002) or the comparative performance between ventures with stable and altered top management teams (Boeker, 1989). The existing research is not often oriented toward an exploration of the practices, such as relying on a virtual role system, used by the remaining team members in their efforts to build a successful venture despite the changes in personnel or circumstance.

#### *Attitudes of Wisdom and Doubt*

Humility has become increasingly discussed in the literatures of leadership and organizations (Badaracco, 2002; Cameron, Dutton, & Quinn, 2003; Collins, 2001; Nielsen, Marrone, & Slay, 2010; Weick & Roberts, 1993). Seen as an important quality to be found in leaders and the corporate cultures they create, humility is considered by some to be especially valuable for organizations facing rapid and unpredictable change (J. A. Morris, Brotheridge, & Urbanski, 2005; Weick, 2001). Even though changing conditions and uncertainty are inherent in entrepreneurial endeavors (Knight, 1921; Reis, 2011), humility is not frequently considered in research on entrepreneurship (Barton, 2010). Instead entrepreneurship research has tended to explore themes of hubris, self-efficacy, confidence, and over-confidence (Baum & Locke, 2004; Hayward, Shepherd, & Griffin, 2006; Hmieleski & Baron, 2008).

Much has been written about the over-confidence bias of entrepreneurs (Busenitz & Barney, 1997; Forbes, 2005). Contexts defined by uncertainty and complexity – such as the process of new venture creation – have been shown to intensify the over-confidence bias (Baron, 1998; Hayward et al., 2006; Lichtenstein & Fischhoff, 1977). An abundance of confidence may help entrepreneurs choose to start ventures despite the odds of failure and to persist in challenging situations (Busenitz & Barney, 1997; Hayward, Forster, Sarasvathy, & Fredrickson, 2010; Markman, Baron, & Balkin, 2005; Zhou, Hills, & Seibert, 2005). However, there are limits to the positive impact high levels of confidence can bestow upon entrepreneurs (Audia, Locke, & Smith, 2000; Bandura & Locke, 2003; Hayward et al., 2006; Hmieleski & Baron, 2008), especially in highly dynamic environments. Some research has suggested training in self-awareness as a possible way to enable entrepreneurs to temper their tendencies toward excessive confidence and respond with more appropriate levels of certainty in uncertain situations (Hmieleski & Baron, 2008).

The contextualized confidence that would be the desired result of such training may have much in common with humility; a “situated humility” (Barton, 2010; Barton & Sutcliffe, 2010) which allows an otherwise confident entrepreneur to acknowledge his/her limitations in a given situation. Humility can be comprised of several elements (B. Owens, 2009) including:

- An acknowledgement of self-limitations;
- An appreciation of the abilities and contributions of others;
- A learning stance;
- A low level of focus on the self.

With these features as a guide, checking assumptions, questioning what you think you know, referencing the team and the self as part of the team, and seeking new information to extend what you (think you) know could all be considered examples of humility in action. These also could be considered interactional examples of mindful behaviors expressed within a social setting. Mindfulness theory posits that because knowledge is always finite, circumstances are always changing, and un-

certainty is always present within all interactions, mindful team members would seek to clarify information, incorporate the details of the present situation, and productively adapt (Langer, 1989a).

### *Heedful Interactions*

Interaction in dynamic contexts such as the Mann Gulch disaster in Weick's study implies in-person real-time communication that is situated in that moment. "Heedful" conversation with team mates might mean respecting the reports and perspectives of others, being willing to act on the input given by others, and honoring one's own observations and meaning-making while attempting to incorporate the perceptions of others (Campbell, 1990; Weick & Roberts, 1993). While interacting in mutually supportive ways has been shown to improve a team's sense of collective efficacy (Bandura, 1998; Caproni, 2001; Sutcliffe & Vogus, 2003) and collective identity (Cameron et al., 2003; Hardy, Lawrence, & Grant, 2005), heedful interactions are more than respectful relations. To interact heedfully means, in part, to empathize with and anticipate the positions and responses of team mates and to shape your own actions to complement the efforts of the team. In fact, this heedful capacity to subordinate one's individual orientation to the service of the collective has been said to be essential to innovation (Dougherty & Takacs, 2004).

Even though face-to-face real-time conversations are undeniably part of most entrepreneurial teams' interactions (Amason et al., 2006), some of the literature on entrepreneurial communication seems to have limited its investigation of these interactions to reports and interviews about "social skills" (Baron & Markman, 2000). Abilities such as reading other people well, creating good first impressions, adapting easily to various situations, and persuading others have been associated with good entrepreneurial team performance. Imagining that heedful exchanges might contribute to the creation of a good first impression, for example, might be a reasonable conclusion to make. However, heedfulness was not explicitly explored as part of the repertoire of social skills in that study. More recently the social skills research has linked an entrepreneur's ability to garner information and resources with their capacity to read people and situations well and to express their emotions

and thoughts clearly and persuasively (Baron & Tang, 2009). But again, while it may be easier to imagine a heedful expression of emotion as more persuasive than a heedless expression, heedfulness was not an explicit part of Baron and Tang's inquiry into social skills.

Another part of the entrepreneurial communication literature tends to emphasize presentations – pitches -- rather than intra-team conversations. Pitches are constructed, at least in part, from prepared and rehearsed points and tend to be monologues more than dialogues. As such they are distinct from interactions as intended by Weick. Presentations also are given to inform or influence a listener rather than to explore a topic collaboratively; they are intended to persuade. Scholarly investigations have revealed that narratives and metaphors are used persuasively by entrepreneurs to build legitimacy and entice people to invest (Chen, Yao, & Kotha, 2009; Larty & Hamilton, 2011; Martens, Jennings, & Jennings, 2007). However, even if persuasion were studied at the level of intra-team conversation, it alone could not explain the iterative and adaptive process of integrating feedback and experience as described in the Creation Model.

Other contexts of interaction are indirectly referenced in the entrepreneurship literature. Research on social capital and networking, for example, accepts that conversations are part of the entrepreneurial practice. The network diversity of entrepreneurs (Stuart & Ding, 2006), for example, is said to enable faster access to more and better information (Marsden, 1983; Rodan & Galunic, 2004) presumably because the members of these networks talk with each other. However, the level of analysis for these works tends to be on the frequency of information sharing activities (Lee & Tsang, 2001) and the structures of information sharing networks (Elfring & Hulsink, 2003). Such investigations into the operational dimensions of interactions can say little about the qualities of the conversations, such as heedfulness, that occur at the level of personal experience.

While entrepreneurs have been considered in the same light as the action-oriented teams studied by Weick and others (Cornelissen & Clarke, 2010) little empirical evidence exists about the interpretive and sensemaking behaviors of founding teams

as they move from concept to creation of a new venture; about the ways that entrepreneurial teams verbally make sense of market behavior and advisor input to craft minimum viable products. While it's accepted that most new ventures do make changes to their original plans (Mullins & Komisar, 2009; Shane, 2008), and practitioners attest to the use of extended-team conversations in the refinement of minimum viable products (Reis, 2011), how entrepreneurial teams collaboratively accomplish this work through their interactions has not yet been explored. By studying the verbal sensemaking efforts used by entrepreneurial innovation teams in the uncertain circumstances that define their work, insights into entrepreneurial cognition – especially entrepreneurial stances toward uncertainty – could be gained.

Because the conversational accomplishment of work-related goals has been studied outside of entrepreneurship, importing the research on workplace interaction might facilitate an understanding of the conversational competencies required of founding teams.

### **Studies of Workplace Interaction in the Tradition of Conversation Analysis**

A richer description of Conversation Analysis (CA) as it relates to this specific research appears in a future chapter, but the fundamental principle that animates this approach is the assertion that socially-constructed accomplishments arise from and can be understood through naturally-occurring interactions (Goodwin & Heritage, 1990; Sacks, Schegloff, & Jefferson, 1974). By paying “respectful intellectual interest in the details of the actual practices of people in interaction” (ten Have, 2007, p. 6), the CA researcher attempts to reveal the situated language that enables meaningful workplace achievements.

Research on workplace interactions has shown how professional tasks – such as landing a plane – are collaboratively produced through conversations between team members. To demonstrate these conversational accomplishments researchers must “disclose and specify the verbal practices and interactional arrangements

through which the institutional practice is talked into being” (Arminen, 2005, p. 16). Studies of this type have their origin in Ethnomethodology which, in part, seeks to identify the socially-situated actions and interactions of people striving to achieve work-related goals (Psathas, 1995b, p. 151). Expanding upon the Ethnomethodological tradition, Conversation Analysis (CA) has emerged as an approach to understanding naturally-occurring conversations of people in context and over time.

Using recorded conversations (captured in audio and/or video), CA examines the order and means by which people collaboratively engage in a specific situation. It considers a team’s interpretation(s) of their environment and their socially-negotiated actions as both situated in and developing through the conversation. Sequences of interaction can be studied in addition to smaller units of exchange such as single words or phrases; the intent is to examine the “intrinsic orderliness of interactional phenomena” (Psathas, 1995a, p. 8). The resulting data from the analysis can include descriptive qualitative assessments and descriptive statistics.

Many studies based in CA explore the order of the conversational features themselves; the structures that enable speakers to make sense of each other in a given situation. Key details that have been studied in depth include: the establishment and repair of mutual understanding between participants (how participants in a conversation repair misunderstandings) (Schegloff, Jefferson, & Sacks, 1977), the allocation of turns (how participants shift between the roles of speaker and listener (Duncan, 1974; Jefferson, 1973; Sacks et al., 1974; Schegloff, 2000); and the verbal rituals that signal the boundaries of an exchange (how participants open and close a conversation and the use of other responsive exchange patterns that lend predictable contours to conversation) (Schegloff & Sacks, 1973; Tsui, 1989). However, while many CA studies have examined how participants make sense of each other, some have studied how people make sense of shared situations – including shared professional situations – through their interactions.

Studies of workplace interactions often have emphasized transactional exchanges between experts and non-experts – including doctors and patients or teachers and students (Arminen, 2005; Cazden, 1988; Drew & Heritage, 1992; Heritage & Clayman, 2010). Some research – including the contributions by Donnellon (1996), Boden (Boden, 1994), and Nevile (2004a) – stands out for its close study of naturally-occurring conversations between peers on the same team at work. It is this approach – especially Nevile’s work with cockpit crew conversations – to understanding the referential and relational aspects of work-related conversations (Linde, 1988, p. 396; Lyons, 1977) that informs this inquiry.

The conversations of cockpit crews are some of the most frequently studied workplace interactions. Questions about the relationship between conversations and the crew’s ability to take off, stay aloft, and land safely (or not) have guided much of the research. Because the cockpit voice recorder – the so-called blackbox – aboard every airplane automatically captures all cockpit crew conversations the exact interactions can be heard repeatedly by researchers. These recordings (and their related transcriptions) are critical; they render the researcher’s conclusions about the team’s work “defensible because [the descriptions] are grounded in the voice data” (Nevile & Walker, 2005, p. 4). Consequently, the findings from the cockpit crew CA research have been applied to improve pilot performance and flight safety; communication training has become required for commercial cockpit crew members (Kanki & Smith, 2001; Nevile, 2004b).

Analyses of recorded cockpit interactions have demonstrated that more successful crews – those able to safely complete a flight even in difficult and/or dangerous situations – communicate more in-flight than less successful ones (J. B. Sexton & Helmreich, 1999). Better performing crews also exhibit several other conversational markers that distinguish them from poorly performing teams (J. B. Sexton & Helmreich, 2003):

- The usage of first person plural (e.g. we, us, our) is more frequent;



- The number of questions asked is higher;
- The use of discrepancy words (e.g. would, could) is more frequent;
- The use of problem-solving expressions (e.g. if we miss an approach we have two procedures we could follow”) is more frequent.

Related work undertaken by NASA researchers (Fischer, McDonnell, & Orasanu, 2007) has found that higher performing teams tend to:

- Function in an anticipatory mode by volunteering information and offering to provide specific help without being asked;
- Express support for each other through praise and empathy;
- Focus the discussion on task-related information about the problem at hand and the team’s goals or strategies;
- Acknowledge conversational contributions by answering questions or noting observations without delay.

Specific investigations into the interactional nature of human error in the cockpit also have revealed language markers of relevance. Overlapping talk, silences, and commanding forms of language, for example, have been associated with the conversational context of an error-prone flight (Neville & Walker, 2005). And indirect patterns of speech have shown mixed results: high-performing crews rely more on mitigated speech than lower-performing crews, but only for certain tasks (Linde, 1988). While indirect speech forms can indicate mutual respect, other forms such as hedges (e.g. perhaps, maybe) effectively weaken a statement’s strength (Hewitt & Stokes, 1975) and can indicate unequal status among speakers (R. Lakoff, 1975). This subtle blur between polite forms of respectful interaction and “super polite” (R. Lakoff, 1975) forms of tentative interaction might account for the mixed results in the studies with the cockpit crews.

While the entrepreneurship literature does reference language details, it is not at the level of detail that has been adopted in studies of other workplace settings. The language of innovative entrepreneurial teams is seldom studied in close detail, in

context, and over time as the team strives to achieve a shared goal. For example, researchers have found that highly successful lead entrepreneurs report frequent use of “what if” questions (Dyer et al., 2008), especially in the innovation process (W. Berger, 2012). However, the entrepreneurs in those studies *reported* their use of questions in hindsight. This is a different approach than is used in the workplace interaction literature. For example, in the cockpit crew studies, utterances, including the “if” statements cited by Sexton and Helmreich (2003), were *recorded as they happened* by the airplane’s blackbox, and each crew’s naturally-occurring conversations were analyzed directly. Without recorded access to the authentic conversations it is not possible to confirm the use of the entrepreneurs’ “if” statements nor is it possible to examine the processes used by the entrepreneurial team members to make sense of their shared situation and enact their work. This marks an important boundary of the existing literature on innovative entrepreneurial teams and is the starting point for this arc of inquiry.

### **Limitations of Existing Research on Entrepreneurial Innovation**

In general most of entrepreneurship literature is quantitative in nature, and the majority of the qualitative work that exists is based on reports and interviews. The same is true for the subset of literature on entrepreneurial cognition, including that which focuses on the Creative Model. While the literature anchored in the Creative Model references language and sensemaking, research has yet to explore the interactions of entrepreneurial teams in action at a detailed level. When language is explored, the research tends to focus on entrepreneurial narratives and their role(s) in resource acquisition. Other streams of language-related research consider the value of entrepreneurial “social skills”, the use of metaphors to describe the entrepreneurial experience and environment, and the language used by scholars in research about entrepreneurs and entrepreneurship. Only rarely does the entrepreneurship literature overlap with the sensemaking (and sensegiving) literature. One study (Cornelissen & Clarke, 2012) is located at the intersection of the entrepreneurial cognition and sensegiving literatures and examines the metaphors and ges-

tures of two entrepreneurs over time. However, even this study, as important as it is, fails to consider the interactions of the entrepreneurial team and focuses only on the persuasive capacity of the individual lead entrepreneurs. There is a lack of research that uses direct observation (and recorded access) to the intra-team interactions experienced by entrepreneurs as they attend to the innovation-related goals of their work. Without inquiries into the detailed use of language as it is used by entrepreneurial teams in action little can be learned about collaborative sense-making in the entrepreneurial innovation process; about any conversational competencies that might contribute to the success of entrepreneurial innovation teams in their quests to craft minimum viable products.

The entrepreneurship literature appears to favor quantitative research. Between 2001 and 2008, 665 papers were published in three key entrepreneurship journals; the *Journal of Small Business Management*, the *Journal of Business Venturing*, and *Entrepreneurship Theory and Practice* (Mullen, Budeva, & Doney, 2009). 71% (478) of these papers were based on empirical studies: 89% (428) using a quantitative approach and 7% (50) using qualitative methods including case studies, interviews, and observations. (The remaining 187 papers were conceptual in nature and neither gathered nor used data.)

Some research (Bird & Schjoedt, 2009) has suggested that future investigations into entrepreneurship should be less dependent on self-reporting than they have been historically. Because self-reports can be misleading – people are prone to errors in recall (Chandler & Lyon, 2001) and to socially-desirable but factually-weak accounts (Arnold & Feldman, 1981) – using them extensively might compromise descriptions of and theories about entrepreneurship. However, forms of self-reporting were the most frequently utilized data collection approaches for the 50 articles on entrepreneurship published by the *Academy of Management Journal* (AMJ) between 1968 and 2007 (Ireland, Reutzel, & Webb, 2007): 24 of the 50 papers used surveys and 20 used interviews for at least some of their data. The 50 AMJ papers also relied on secondary sources in 29 instances. Perhaps because of the recent availability of longitudinal repositories of publically-available data sets

such as the Panel Study of Entrepreneurial Dynamics (PSED) and the Global Entrepreneurship Monitor (GEM) project, 19 of the 29 papers using secondary data appear between 2000 and 2007. Data from direct field observation was present in only 3 of the papers in 39 years.

Consistent with these larger trends, the research from within the Creative Model of entrepreneurial cognition also seems weak on qualitative studies done in context. The research following the Creative Model suggests that entrepreneurs are actively involved in the shaping of opportunities (Gartner et al., 2004), but it fails to explain *how* the team members negotiate the uncertainties and demands of innovating as their situation unfolds. It so far has failed to provide sufficient visibility into the specific actions and interactions that enable entrepreneurial innovation. As Hoskisson et al (2011) expressed, “we do not know how entrepreneurship arises, exerts its influence on innovation and competitive advantage, and is subsequently transformed in terms of individual actions and interactions (micro-foundations) which are embedded in an organizational context. More research in this area would likewise be fruitful for entrepreneurship” (Hoskisson, Covin, Volberda, & Johnson, 2011). If action is the end result of entrepreneurial cognition (Bird & Schjoedt, 2009; McMullen & Shepherd, 2006), then research into the ways that entrepreneurs enact their work should be explored in greater detail (Bird & Schjoedt, 2009; Gartner, 1988; M. H. Morris, Kuratko, Schindehutte, & Spivack, 2012) – including research at the interpersonal level (Ensley & Pearce, 2000; Hargadon & Bechky, 2006; West, 2007).

Although studying interpersonal interactions could include detailed investigations of verbal exchanges, most language-oriented research in the entrepreneurship literature tends to emphasize forms and functions of communication rather than the dynamic and emergent properties of intra-team conversations. Storytelling, for example, has become a theme within the entrepreneurship literature in general (Gartner, 2010; Larty & Hamilton, 2011). Within this literature is research that suggests a positive link between narrative skill and fund-raising ability (Lounsbury & Glynn,

2001; Martens et al., 2007; O'Connor, 2004). Passionately presenting the information of a fundraising pitch in the form of a story may be an effective communication strategy that can influence investors' perceptions and decisions (Chen et al., 2009). Stories may convey information about the new venture's unique identity, market validation, cultural legitimacy, and future promise in a way that demonstrates personality and builds rapport – and contributes to the “gut-feel” that guides some early-stage investors (Zacharakis & Shepherd, 2007). Based on interviews and reports with entrepreneurs and venture capitalists, these studies miss the interactive dimensions of entrepreneurial conversation in context.

Storytelling competence might be considered part of a set of social skills. Polished social skills – such as making favorable first impressions, adapting smoothly to social situations, and maintaining a situated awareness of other people's experiences – have been associated with higher-performing entrepreneurial teams (Baron & Markman, 2000, 2003; Baron & Tang, 2009). This stream of research is important; it highlights the role of face-to-face communications in entrepreneurial success rather than intra-personal characteristics of an entrepreneur's psychology (Llewellyn & Wilson, 2003) or cognition (Baron, 1998), or impersonal dimensions of an entrepreneur's social network ties (Elfring & Hulsink, 2003). However, based on questionnaires and reports, these studies cannot illuminate how social skills are enacted by an entrepreneurial team in context.

The social encounters and cultural cues experienced during the process of starting a new venture are said to contribute to the formation of an individual's identity as an entrepreneur (Fletcher & Watson, 2007; Rae, 2006). Research into the portrayal of entrepreneurs in popular culture suggests that entrepreneurs tend to be described in heroic and superhuman terms (Nicholson and Anderson 2005; Ogbor, 2000; Carr and Beaver, 2002). Perhaps this is unsurprising given that entrepreneurial success has been experienced by so few, and the daily work that entrepreneurs do to achieve their success has remained mysterious to many. Other research into the ways that entrepreneurs describe their own work has shown a reli-

ance on metaphor and cliché (Cardon et al., 2005; Down & Warren, 2008). Often this frequent use of metaphor is understood as a communicative tool that enables entrepreneurs to describe one (new and possibly still emergent) thing in terms of another (G. Lakoff, 1993). However, sometimes the use of metaphor is seen as a kind of theorizing (Cornelissen, 2005; Hill & Levenhagen, 1995; Tsoukas, 2009). Understood in this way the use of metaphors might benefit entrepreneurs as they endeavor to socially construct their products and organizations; as they attend to the challenges of sensemaking. However, identifying the metaphorical frames used by and about entrepreneurs cannot illuminate the means by which entrepreneurial teams verbally accomplish their work.

Scholars, too, have framed entrepreneurs and the entrepreneurial experience with the words they've chosen. For example, the concept of opportunity – widely used and considered a fundamental concept for entrepreneurship by some (Hansen, Shrader, & Monllor, 2011) – has become a topic of scholarly debate (Davidsson & Tonelli, 2013; Gartner et al., 2004). Under scrutiny for its native use (of lack of it) by entrepreneurs and for its drift in meaning across the literature, the term opportunity may need to be replaced in future research intending to develop meaningful micro-level theory about the actions taken by entrepreneurial teams to advance their innovations and ventures.

While this research project springs from the Creative Model of entrepreneurial cognition – the home of much of the opportunity research – it also draws significantly from the sensemaking literature. Sensemaking has rarely overlapped with the entrepreneurial cognition literature; the term appears in only 22 articles about entrepreneurial cognition between 1976 and 2008 and is referenced within only 2 of these articles more than 6 times (Grégoire et al., 2011, p. 1454). In none of these articles is sensemaking explored at the level of specific conversations in context over time. Other more recent research, as already mentioned, has emphasized the use of metaphors in the narratives of interviewed entrepreneurs which demonstrates an aspect of one individual's meaning making. And in 2012 Cornelissen

and Clark compared the sensegiving metaphors and gestures of two separate entrepreneurs (Cornelissen & Clarke, 2012). The data for their research was obtained from video recordings of the two entrepreneurs interacting with their respective employees, customers, and investors. However, the inquiry was limited to the expressiveness of the single individuals and did not address the conversational and constructive process of collaborative sensemaking between team members. Moreover, the study examined the persuasiveness of the two entrepreneurs – their ability to acquire resources – and not their teams' collaborative capacity to (re)define and develop a successful new product. Lastly, the study focused on the use of metaphors to the exclusion of any other aspects of sensemaking that are observable through language – utterances that demonstrate information exchange, meaning ascription, and action planning, for example, or showcase improvisation and bricolage, virtual role systems, heedful interactions, or attitudes of wisdom and doubt.

Because conversation enables team members to perform their work-related goals (Drew & Sorjonen, 1997, p. 92; Nevile, 2004a, p. 2; Perkins, 2003; Shotter, 1993), detailed language analysis of an entrepreneurial team's interactions could reveal how an entrepreneurial team grapples with the uncertainty of new information and changing circumstances. Detailed analysis of naturally-occurring conversation among team members also could reveal the team's collaborative sensemaking practices; how team members understand and enact their work in context. However, little empirical exploration into the process of sensemaking in the innovative entrepreneurial process has been done. The study aims to explore how entrepreneurial innovation is conversationally accomplished by teams. It is designed to contribute to the scholarly understanding of entrepreneurial cognition – and by extension success – through the micro-analysis of entrepreneurial teams' workplace interactions; exploring whether and how verbal sensemaking operates in the uncertain circumstances that define early stage entrepreneurship.

This doctoral research project has been designed to evaluate the naturally-occurring intra-team conversations of early-stage entrepreneurial teams engaged in the process of creating minimum viable products. The setting in which the teams conducted their work was a university-sponsored lean-startup contest; a setting which provided access to early-stage entrepreneurial innovation teams that shared a timeline and a basic support structure (e.g. all teams have \$1,000, on campus workspace, and access to advisors). The contest also provided a proxy for success. The recorded intra-team conversations were examined at a micro-analytical level to identify the ways that these teams verbally made sense of their unfolding situations. The resulting conversational profiles then were compared across teams representing different performance levels as determined by the contest's judges.

## **Research Questions**

Specific questions guiding the research include;

1. What verbal sensemaking patterns can be observed within team conversations across the arc of a lean startup entrepreneurship competition?
2. What variations in sensemaking language exist when teams focus on different types of uncertainty related to their entrepreneurial quest?
3. Are there differences between the teams' sensemaking language and performance as determined by ranking in the contest?

Addressing these questions requires a study that draws from the traditions of ethnomethodology – especially Conversation Analysis – and from ethnography. Together these investigative approaches can yield rich qualitative findings. By coupling these vivid details with descriptive statistics can, rich profiles of each team can be crafted and meaningful comparisons across teams can occur. The next chapter offers a fuller description of the methodological orientation and design of this research.



## **CHAPTER THREE: METHODOLOGY AND RESEARCH DESIGN**

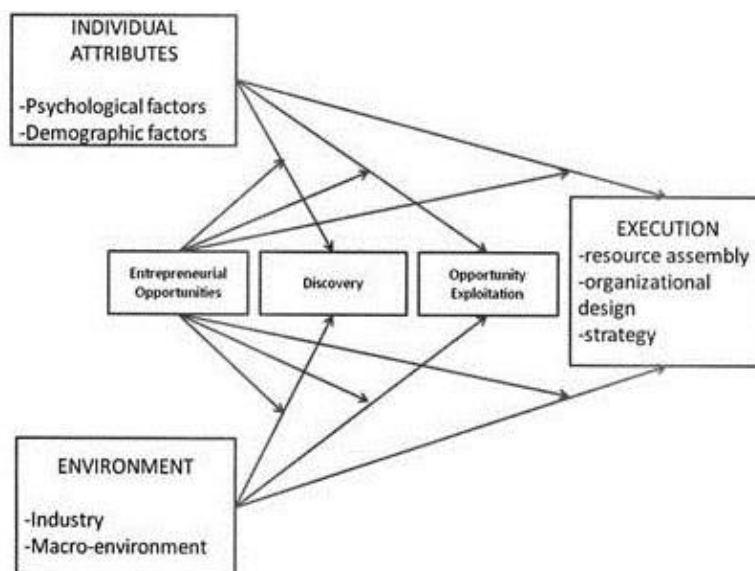
This chapter begins by delving deeper into the philosophical orientation and implications of the research trajectories explored in Chapter Two. The chapter then explores the philosophical underpinnings that animate this research project's design. The chapter continues with an overview of the relevant methodological traditions, a note about piloting efforts, a description of the data collection processes, and an encapsulation of the data analysis procedures. Descriptions of the codes and the studied teams are included as are examples of the coded transcripts. The chapter concludes with brief statements about the originality of the research and the potential weaknesses of the research design along with intentional efforts to address them.

### **Contrasting Approaches to the Study of Entrepreneurial Innovation**

As implied by Chapter Two, much of the research on entrepreneurial innovation teams has been influenced by realism and positivism. Seen through such a lens, the phenomenon of entrepreneurial innovation has “an existence that is independent of social actors” (Bryman & Bell, 2007, p. 22). These objectivist approaches have resulted in a body of work that has attempted to establish enduring traits – at the intra-personal level (such as risk-taking propensity) or impersonal levels (such as functional composition of teams or access to resources) – as static truths about an entrepreneurial team's capacity for success. This stream of research seeks to find enduring attributes about a personality type or an environmental factor that consistently will enable some individuals find or exploit (pre-existing) entrepreneurial opportunities better than others (Shane, 2003). It also considers the entrepreneurial process to be a mostly linear progression -- beginning with the opportunity existing in the world and ending with a performance outcome for the entrepreneurial team. It defines uncertainty mainly as a threefold, externally-defined challenge: the technical uncertainty about the ability to produce a working product for an acceptable price, market uncertainty about levels of demand for the product, and competitive uncertainty about the team's ability to differentiate (and profit) from

their efforts to exploit the opportunity (Shane, 2003, p. 205). Uncertainty is seen as something external and undesirable (if inescapable) that must be managed and minimized through planning by the entrepreneurial team; predicting the uncertain possibilities that the future may hold is central to an entrepreneurial team's success. (See Figure 3.1.)

Figure 3.1. Shane's Model of the Entrepreneurial Process

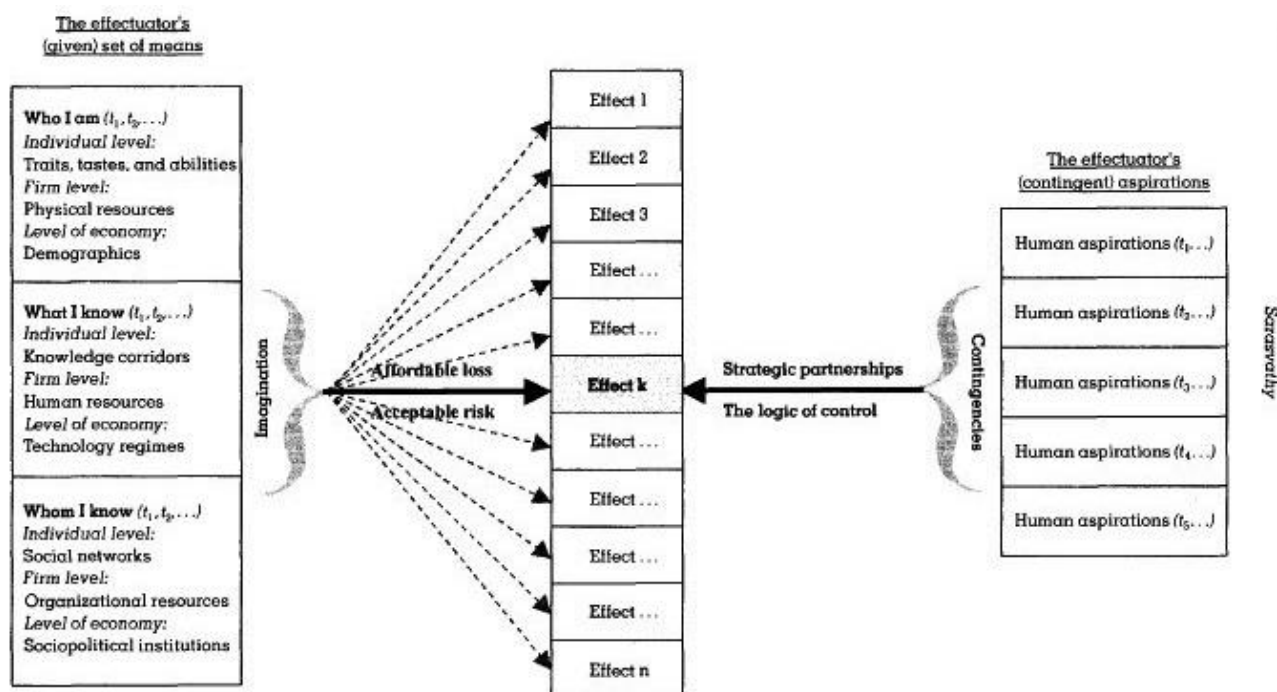


Source: Shane, (2003 p. 11).

The recent thrust in the entrepreneurship literature related to the Creative Model (Sarasvathy et al., 2005) marks an important transition in the ontological orientation of entrepreneurial innovation research. Simply put: in the Creative Model the entrepreneur constructs what the other models assume is given (Sarasvathy, 2004a, p. 292). The Creative Model requires pluralism – a nuanced orientation that “transcends purely subjective and purely objective notions” (Sarasvathy et al., 2005, p. 143) – to accommodate the situated and reflexive efforts of entrepreneurial teams acting within real and dynamic contexts. Research in the Creative Model considers entrepreneurial innovation in a constructivist light: suggesting that it is continually being accomplished through the efforts of engaged individuals (Bryman & Bell, 2007, p. 23). Its ontology of entrepreneurial innovation is not confined by the re-

quired presence of specific intra-personal or environmental factors to explain success; rather it seeks to understand the ways in which layers of interactions – between people, and between people and the entrepreneurial ecosystem – construct and reconstruct markets and products. The Creative Model's theory of effectuation (Sarasvathy, 2001) argues that entrepreneurial teams apply knowledge and control, rather than analysis and prediction, to contend with uncertainties. This kind of non-predictive control in the face of uncertainty is based on entrepreneurs having a focus on means rather than ends, an awareness of levels of affordable loss, the presence of committed partners, and the ability to leverage surprises along the way (Wiltbank, Read, Dew, & Sarasvathy, 2009, p. 119). And while Effectuation theorists see uncertainty as less of a hindrance to entrepreneurs – surprises can be turned into advantages in some cases – than Causation theorists, they nevertheless still regard uncertainty as a somewhat threatening externality that requires oversight and *control*. (See Figure 3.2.)

Figure 3.2. Sarasvathy's Entrepreneurial Effectuation Process



Source: Sarasvathy (2001, p. 253).

Given the objectivist orientation of much of the entrepreneurship research, quantitative studies dominate the literature (Mullen et al., 2009). However, published articles related to the Creative Model have a more varied profile. Between the introduction of the effectuation concept in 2001 (Sarasvathy, 2001) and 2011, 29 articles were published about it: 16 were conceptual (and did not employ data), and 13 were empirical which included 7 experimental studies, 1 field study based on secondary data (a meta-analysis), and 5 field studies based on primary data (Perry, Gaylen, & Markova, 2012). These experimental studies all relied upon similar techniques: individuals were asked to think aloud as they solved problems considered to be entrepreneurial and the researchers analyzed the spoken thoughts of the participants. Results of these studies suggest differences between entrepreneurs and non-entrepreneurs in their use of effectual and causal logic when confronted with risk and reward scenarios and in their efforts to predict or control uncertainties. Of the five empirical field studies, 3 were qualitative (Harmeling, Oberman, Venkataraman, & Stevenson, 2004; Harting, 2004; Sarasvathy & Kotha, 2001). These qualitative studies all examined a single case and used the interview transcripts as the material for content analysis; the studies were interested, among other things, in the presence of effectual reasoning in the accounts provided by the interviewees.

Although the effectuation concept is at the heart of the Creative Model, little, if any, of the effectuation-oriented research has attempted to study entrepreneurial agency in action. The reasons for this oversight might be simple: to study entrepreneurial teams that are actively and authentically engaged in the act of innovating requires a researcher to be present, at least virtually, while the entrepreneurial teams work. But if entrepreneurial opportunity emerges, as some scholars suggest (Gartner et al., 2004), from acts of sensemaking, existing research on the Creative Model has yet to provide empirical evidence of its core constructivist/constructionist argument. It has yet to study entrepreneurial innovation teams enacting their work; teams verbally making sense in real-time of the uncertainties that define their work and collaboratively constructing the opportunity – and their minimum viable product – from the meaning(s) they make.

## **Lodestars**

Two key concepts shape my involvement in the current research project and its design. This section will briefly outline these twin lodestars: the social construction of entrepreneurial opportunity and the interdependence of theory and practice.

### The Social Construction of Entrepreneurial Opportunity

In concert with the Creative Model previously described, I consider entrepreneurial opportunity to be the result of human effort to find a nexus between a team's product vision and a market's acceptance of it. Interaction – between the entrepreneurial team and the ecosystem and between the team members – engenders both the development of an innovation and its concomitant opportunity. The intra-team interactions, of course, constitute more than verbal conversations, but verbal conversations do play a part in the construction of a minimum viable product. Before exploring the specifics of verbal interactions in the entrepreneurial innovation process it might be valuable to remember that dialogue is central to all group action (Schein, 2003). And, much as an architect has a "dialogue" with the building site, the clients, and with her own sensibilities and expertise (Schön, 1988) an entrepreneur (or entrepreneurial team) could have a communicative exchange with the ecosystem, prospective customers, and their own abilities and vision while enacting their work.

One key role that conversations, especially verbal exchanges between team members, may play is to ascribe meaning; to make sense of the ongoing puzzles that an entrepreneurial team can encounter. By engaging in conversation about their shared experience, a team can "look at the meanings it has taken from that experience and excavate the qualities that made it significant" (Amulya, 2004, p. 4). So, for example, if a team receives contradictory feedback from multiple sources in their ecosystem, they can discuss that puzzling experience, make sense of it, and articulate their next steps based on the revised meaning(s) they've given to their circumstance. In other words, the team would be engaging in an act of collabora-

tive sensemaking (Weick, 1995) through their dialogue – and their dialogue would serve as an expression of their agency in the iterative and interactive creation of their entrepreneurial endeavor.

To ascribe meaning, however, is not a simplistic matter. Meaning, as an interpretive process, can take several forms including: knowing what someone else means (intersubjective mode), relating experiences to actions (actional mode), and connecting events to external ideals and obligations (normative mode) among others (Bruner, 1996). Moreover an entrepreneurial team can focus their interpretive meaning-making on various levels of experience: content (what are we doing?), process (how are we doing it?), and premise (why are we doing it in this way; why are we doing it at all?) (Mezirow, 2000).

Sensemaking conversations are, in essence, reflective dialogues between team members. They are verbal exchanges in which meanings are (re)considered and (re)assigned. While the term “reflective” might suggest that these dialogues are retrospective conversations about experiences long past, that may not be the case (Raelin, 2001, p. 19). Reflection can be anticipatory; enabling active thought about possible alternatives and the likely result of actions. In this mode teams are learning “from the future as it emerges” (Scharmer, 2007) by attending to the changes in their environment and the shifts in their understanding of those changes. Reflection can be active (or interactive) in real-time; enabling contemporaneous thought and action as an event unfolds (Van Manen, 2006, p. 87). In other words, we can think about the consequences of actions before we take them, and “we can think about something while doing it” (Schön, 1983, p. 54).

Schön's theory of reflective practice stems from a constructivist position; by engaging in reflection and action, an individual or team brings to fruition new ideas, actions, and material innovations (Valkenburg & Dorst, 1998, p. 251). However, the fruits of reflective practice are not necessarily predicated or demonstrated by a team knowing more – the team members may or may not have integrated new in-

formation into their ideas, actions, or products. Rather reflective practice leads to a team knowing differently – they have developed new interpretations, a new set of meanings, that lead to advances in their work (Kegan, 2000). Of course, there is a role in the entrepreneurial innovation process for conversations that can be advanced by the introduction of new information; for discussions about what Heifetz would call *technical* challenges that can be overcome by new, better, or different information. However, entrepreneurial teams may be facing not only or not even mostly technical challenges; they may be facing *adaptive* challenges that require them not only to know more but to know differently (Heifetz, 1994).

Concurrent with crafting a minimum viable product, entrepreneurial innovation teams may be experiencing an epistemological shift. As they engage in the reflective dialogues that lead to new products and new ways of understanding the content, process, and premise of their work, at least some entrepreneurial innovation teams may become able to “look at” what they previously had been able to only “look through” (Kegan & Lahey, 2010, p. 438). If, for example, a team can realize through reflective dialogue that an assumption they had been holding – about the product’s features and market acceptance, about the way they’ve been developing the product and engaging the ecosystem, or about the reasons motivating their actions to-date – is faulty and reconsider their approach, they have increased their epistemological complexity. Through reflection they have become able to detach a former assumption from their work whereas previously the assumption had defined their work.

Challenging and displacing central assumptions, as reflective dialogue can do, is uncomfortable for most, if not all, people (J. G. Berger, 2004, pp. 343-344). Some scholars have suggested that teams must develop core skills to engage productively in reflective practice; skills related to articulating one’s own perspective and experience, inquiring about others’ perspectives and experiences, and staying inquisitive during the reflective dialogue (Raelin, 2001, p. 24). Others have suggested that a “holding environment” (Kegan, 1982, p. 256) can aid people engaged in

such transformational tasks; supportive social structures can serve as an “evolutionary bridge” (Kegan, 1994, p. 43) by helping teams (and team members) develop more expansive ways of understanding and working within their situation. Supportive spaces – such as those possibly provided in a university setting – which can enable transformation and innovation have been said to include physical, social, and technological dimensions (Peschl & Fundneider, 2008, p. 16). In other words, an entrepreneurial team’s community of practice can help the team with its transformational tasks; the community keeps the team from being overwhelmed by their meaning-making challenges but doesn’t let the team “escape or diffuse” them (Kegan & Lahey, 2010, p. 446). (The point being: if a team were to become overwhelmed by meaning-making challenges or able to side-step them, the team would miss the transformational opportunity, and their potential to innovate would be diminished.) Support from the community, however, is not to be confused with comfort; rather support comes in the form of helping teams “sustain the courage needed (e.g. living with the discomfort)” while working at the edges of their current frames of meaning (Taylor, 2007, p. 183). Productive systems of support tend to help teams recognize the edges that they are experiencing, stay with the teams in their struggles to make sense anew, and assist the teams in building new, more complex frameworks that can accommodate the emergent aspects of their experience that had been in conflict with their earlier frames of meaning (J. G. Berger, 2004, p. 346).

So, at least to this researcher, entrepreneurial opportunities do seem to be socially constructed; the work of entrepreneurial innovation teams seems steeped in and dependent upon interactions of various kinds. Reflective dialogues with the environment (both in terms of the people in the ecosystem and in terms of market trends), with other team members, and even with the self as team members strive to make meaning of their shared situation may enable teams to navigate the uncertainties of the entrepreneurial process and successfully craft their minimum viable products.



## The Interdependence of Theory and Practice

An additional kind of interactive relationship – the interdependence of theory and practice – also animates my involvement in this research. Some have claimed that entrepreneurship as a field of research is still maturing (Cooper, 2003; Low & MacMillan, 1988); that it is rapidly growing but still grappling with its differentiation from management research more generally. Key points that support this premise include: researchers continue to evaluate the status of entrepreneurship as an independent field of study (Davidsson, 2003; Ireland et al., 2007; Sarasvathy, 2004b; Zahra & Wright, 2011), and they continue to search for a shared definition of key concepts including entrepreneurship itself (Carlsson et al., 2013; Davidsson, 2005; Gartner, 1990). As previously mentioned, the definition of the term opportunity (and its usefulness as a concept) in entrepreneurship research is an ongoing debate; a debate fueled in part by the possibility that opportunity is a scholarly concept that has been imposed upon practitioners (Gartner et al., 2004). In the study of entrepreneurial narratives that Gartner and his team conducted, entrepreneurs tended to have their own ways of understanding their work; they had their own theories about their work that were distinct from scholarly theories and expectations. As more scholars are turning to entrepreneurial narratives to build theory (Larty & Hamilton, 2011; Rae, 2004), entrepreneurs themselves are becoming more active in publishing their practiced-based theories.

The social constructivist concept of theories emerging from practice (Schön, 1983; Shotter, 1993) suggests that practitioners, such as entrepreneurs, form ways of understanding their work that include abstracted principles of action built out of their lived experiences. These lay theories can be limited in their theoretical reach: success stories that explain what worked only for a particular team at a particular time and place. However lay theories can also form the foundation for robust and widely applicable theories. Scholars have begun to build more generalized theories in conjunction with entrepreneurial narratives; articulating boundaries that attempt to explain why, how, and for whom the success story's lessons will work (Rae, 2004). Simultaneously, entrepreneurs have begun to do the same.

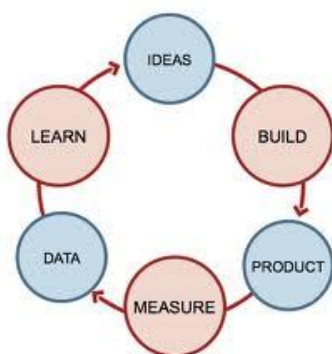
While many entrepreneurial theories of practice have been published in recent years (Croll & Yoskovitz, 2013; Feld, 2012; Feld & Cohen, 2010; Furr & Ahlstrom, 2011; Hoffman & Casnocha, 2012) perhaps none have had the impact of the book, *The Lean Startup* (Reis, 2011). Widely embraced by entrepreneurs and the entrepreneurial ecosystem, the book has inspired Meetup.com groups in 94 cities in 17 countries (Reis, 2014). It is the basis for many informal entrepreneurial learning events around the world including an annual 3-day conference and the Startup Weekend series, a Kauffman Foundation affiliate, which has hosted 1,068 events, in 478 cities, resulting in 8,190 new ventures as of March 3, 2014 (Nager, 2014). The principles outlined in the *Lean Startup* book also have inspired many minimum-viable-product competitions at a growing number of universities and cities around the US (Harthorne, 2014; HBS, 2014; Kappe & Wyder, 2014; Schroeder, 2014; UW, 2014).

Written from personal experience, interviews, and observations of companies such as Dropbox, Grockit, Zappos, and IMVU (a company that Reis helped to start), *The Lean Startup* posits a theory of high-tech entrepreneurial success based on iterative experiments and team learning. It acknowledges that entrepreneurs grapple with uncertainty and suggests that the optimal means for functioning within such circumstances is to deliberately test team assumptions about a product's ideal features and its potential for widespread adoption. The author advocates a three phase cycle: building prototypes, measuring results of deliberate tests, and adapting the prototypes accordingly. This learning cycle, as depicted in Figure 3.3, enables a team to rapidly collect and interpret feedback on their emerging product and develop only what prospective customers actually use (not what the market says it wants or what the entrepreneurial team believes that the market should want.)

The lean startup philosophy is an example of what has been called design thinking – “a set of contingent, embodied routines that reconfigure the socio-material world” (Kimbell, 2012, p. 131). Iterative prototyping, attention to customer behavior, and

teamwork are attributes typically associated with design thinking (Goldschmidt & Rodgers, 2013). And both scholars and practitioners tend to see design thinking as valuable to innovation and to the creation of a competitive advantage in business (T. Brown, 2008; Cross, 2011; Martin, 2009).

Figure 3.3. The Lean Startup Learning Cycle



Source: Reis (2011, p.75)

Even though the design process as it relates to entrepreneurial opportunities has been identified as an area in need of additional scholarly study (Sarasvathy, 2004b, p. 9), it has been slow to attract researcher attention. Design work emerges “over time, in unique circumstances, with other people, through complex, situated acts of seeing, saying, and doing” (Fleming, 1998, p. 41). The boundaries between saying and doing are blurred in the context of design work because the language of design work is performative; a team’s conversation “enacts [the] design and actualizes the designed work” (Dong, Lepri, Kim, Pianesi, & Pentland, 2012, p. 6). Through their conversations, teams doing design work “clarify, explain, interpret, assess, argue, and engage in iterative levels of reflection and critique” that result in mutually-understood meanings and new products (Oak, 2011). Moreover, these conversational processes bridge the two conceptual design spaces – the problem space and solution space – which are simultaneously co-developed (Dorst & Cross, 2001, p. 11). This is said to be especially true when a material innovation – such as a minimum viable product – “is the goal and the problem definition may be

revised or at least negotiated at almost any stage” (Goldschmidt & Rodgers, 2013, p. 468).

Given the interactive dynamics of design work, to investigate it requires research approaches that attend to the verbal, social, and inherently-situated nature of doing design; approaches such as analytic ethnographies and Conversation Analysis (Luck, 2012; Matthews & Heinemann, 2012). By using CA to look at design work – such as the work of entrepreneurial teams in the act of innovating minimum viable products – researchers are able to consider what types of verbal “actions are required to create a distinctive, new object” (Oak, 2011, p. 224). Consequently, I’ve chosen to adopt the techniques of analytic ethnographies and Conversation Analysis in this study. With them I will seek to bridge the concepts of design work as articulated by the academic Creative Model and the practitioners’ lean startup model of entrepreneurial innovation.

These two lodestars – that entrepreneurial opportunity is socially constructed and that theory and practice are interdependent – are expressed in this research through its philosophical underpinnings and its research methodologies. The next section outlines the theoretical foundations and methodological techniques in greater detail.

### **The Theoretical Rationale Animating this Research Inquiry**

Drawing on some of the nomenclature of Saunders et al (Saunders, Lewis, & Thornhill, 2009), this thesis takes an interpretivistic/constructionist perspective as a way to understand entrepreneurial stances toward uncertainty as revealed by intra-team conversations. The concept that understanding is plural and subjective is fundamental to this philosophical perspective. Consequently, the knowledge gathered in an interpretiveist/constructionist inquiry is descriptive; attempting to convey an appreciation of events and processes as they are understood by the actors involved. The role of the researcher in an interpretivist/constructionist paradigm also is shaped by an appreciation for the situated experience of the actors involved. The

researcher acts as a respectful observer of those being studied and recognizes that findings – and even the questions guiding the research – are influenced by the beliefs held by the researcher. In an interpretivist/constructionist framework, the findings are meant to foster understanding about the phenomenon being studied, and they might inform theory, practice, or both. Ontologically this perspective is consistent with the positions held by advocates of the Creative Model in the entrepreneurship literature; that entrepreneurial opportunities (including the complex interplay between market and product creation) are socially-constructed by the actions and interactions of individuals.

Research of an interpretivist/constructionist nature tends to rely on qualitative methods. Research strategies including case studies, ethnographies, and grounded theory could all be appropriate expressions of an interpretivist/constructionist inquiry. Qualitative methods such as case studies are suited well for exploratory studies; for theory building rather than theory testing (Eisenhardt, 1989). Multiple case studies can strengthen the foundation of an emerging theory (Yin, 2012); “yielding more robust, generalizable, and testable theory than single case research” (Eisenhardt & Graebner, 2007, p. 27). Moreover, by selecting multiple cases with contrasting natures (e.g. a high-performance case paired with a low-performance case) the data tends to present crisp and distinct patterns” (Eisenhardt & Graebner, 2007, p. 27).

Given that pluralism is a hallmark of an interpretivist/constructionist perspective, quantitative methods, especially when used in combination with qualitative ones, can enrich the findings and enhance the research (Newman & Benz, 1998). A mixed methods approach can be stage-dependent used, for example, during data analysis only (Johnson & Christensen, 2004). Nested approaches to mixing qualitative and quantitative methods can be used to enable the identification of features in the data that would remain otherwise opaque; pointing out new terrain worthy of description (Morse, 2003, p. 192; Tashakkori & Teddie, 2003, p. 230). Incorporating quantitative methods as a complementary means of description also could

make the qualitative findings more accessible to readers with a positivist orientation (Creswell, 2003, p. 23); inviting more people with a diversity of understandings into the conversation about the research and its meanings.

The appropriate use of qualitative and quantitative methods can be associated with the maturity of the field of inquiry (Edmondson & McManus, 2007). For example, research on topics with a nascent level of existing theory would benefit from a qualitative research design while research on topics with mature levels of existing theory would be served better by a predominately quantitative design. However, for topics with intermediate levels of existing theory, a design that weds qualitative and quantitative techniques can help integrate standing but separate theoretical elements (often from different bodies of literature) into a provisional theory about the subject under investigation.

Effectuation theory, which is at the origins of the Creative Model, has been considered by some to be transitioning between a nascent and intermediate level of theory (Perry et al., 2012). As such it would be appropriate to embrace a mixed methods approach in an inquiry related to the Creative Model; an inquiry such as this one into the sensemaking language of entrepreneurial innovation teams. By viewing the qualitative data through a quantitative lens, the essence of the pure and predominant qualitative work is retained; it is also enhanced because the data is allowed to suggest other interpretive possibilities.

Such a mixed methods approach has been selected for this inquiry into the sensemaking language of entrepreneurial innovation teams. The qualitative data leads the analysis and interpretation because little is known about this specific subject matter; the same data then is viewed through a quantitative lens. The combination retains the primary essence of the qualitative work and enhances it by allowing other interpretations to emerge from the quantitative examination of the same data. In other words, the research employs a concurrent nested approach for quantifying qualitative data: “Code qualitative data, assign numbers to codes, and rec-

ord the number of times codes appear as numeric data. Descriptively analyze the quantitative data for the frequency of occurrence. Compare the two data sets” (Morse, 2003, p. 233).

## **Methodological Traditions**

This research project draws from two main methodological traditions to illuminate the sensemaking of innovative entrepreneurial teams; Conversation Analysis (CA) and Ethnography.

CA is a micro-level examination of naturally-occurring talk. Emerging from sociology and ethnomethodology CA enables researchers to uncover structures and patterns in conversation. It considers a team’s socially-negotiated actions as both situated in and developing through the conversation. It is data-driven; a researcher relies on the data evident in the recorded conversations to understand the motivations, relationships, and accomplishments of the speakers.

Naturally-occurring conversations to be analyzed with CA are recorded and transcribed. Based on these recordings and transcriptions, the researcher aims to discover patterns in the interactions which demonstrate how the speakers negotiate their situation as it unfolds. In pure CA projects, the analysis may be conducted on any conversation to show how social order arises through granular shifts within specific interactions (ten Have, 1999). In applied CA projects, the analytical process also can be used to “deliver some news about the [verbal] organization of valued activities” (ten Have, 1999 p. 186) such as the innovation of a minimum viable product in this study. It could be said that pure form CA excavates intersubjective meaning making – efforts by speakers to understand each other in a conversation – while applied CA mines actional and normative meaning making – efforts by the speakers to understand and integrate into their plans what other people have said and expect (Bruner, 1996).

CA in its most pure form is intensely detailed. It studies conversational contributions utterance by utterance and anchors the terms of the analysis from the studied

conversation itself. For example, episodes for analysis are bracketed by the natural openings and closings of topics rather than externally-applied measures, and codes for the utterances emerge from the participants' expressions rather than externally-prescribed terms. CA in its purest form also employs the Jeffersonian transcription technique which captures intricate, split-second (or split syllable) details of conversation to attempt to further illuminate the situated verbal mechanics of participants making sense of each other (Jefferson, 1984, 2004). (See Appendix Two for more detail on Jeffersonian notation.)

Because this study aims to show how the teams are making sense of their shared situation – not how team members are making sense of each other – the analysis was an example of what ten Have might call applied CA. The study did analyze speaker contributions utterance by utterance and developed codes based on the participant's situated moves. It also bracketed the episodes for examination based on the rhythms of the naturally-occurring conversations. However, it did not employ the micro-analytical notation techniques for all episodes. Jeffersonian notation was reserved for some moments of acute sensemaking (as recognized from the unmotivated looking); otherwise coding occurred while the researcher was listening to the recordings and reading the basic transcription.

Some might suggest that without the Jeffersonian notation for every utterance this study's methodological approach could be described more accurately as Discourse Analysis. However, in addition to the previously-mentioned situated elements that inform the analysis, the study is examining *how* the participants talk – not *what* they talk about – while engaged in the innovation process. The study is examining the structures of participant interaction; it notes the use of claims and requests, for example, in the conversation, not the content of the conversation which tends to drive Discourse work. It's worth emphasizing that this work is coding only conversational data; Discourse analysis projects often include data beyond the conversations of participants as "texts" for coding. This study relies on an inductive approach while Discourse analysis is deductive. So although more typical CA studies examine the turn-taking or repair structures of conversation, the socially-situated



features of conversation examined in this study also are structural. As such, the study could be said to follow more closely in the tradition of applied CA than it does in that of Discourse Analysis.

Because of its data-driven orientation CA incorporates a Grounded Theory approach. Beginning with a period of open coding to label basic themes in the data, axial coding to group the many labels into a set of nascent codes, and selective coding to understand relationships between codes, Grounded Theory is an iterative process (Glaser & Strauss, 2009). Over time the coded data and categories of codes eventually lend themselves to the creation of a conceptual model or provisional theory (Creswell, 2012).

CA's focus on the specifics of language can be complemented by the descriptive details available through ethnography. Although some have said that CA and ethnography have only a "limited affinity" (Maynard, 2006), this study aims to contextualize any language-oriented findings from the conversation analysis with "thick descriptions" (Geertz, 1973) about the culture and setting that surround the teams' work. Because CA's interest in talk does not stem from a reverence for language but from an awareness that actions and cultures are socially-accomplished in and through conversation, it pairs well with ethnography. CA can showcase the structure of social interaction (at the heart of other types of action), and ethnography can describe the "scenes in which the actions occur" (Moerman, 1988, p. 57) and are reflexively created through the conversations.

While it would not be possible to analyze the details of conversation through observational field work alone, familiarity with the context of a conversation can be valuable to a researcher (Heath et al., 2006). The interpretive ethnographer's job is to honor the "experience near" (the perspective as known to a subject in the study) and to anchor it within an "experience distant" (the perspective as known to an analyst or other specialist) (Geertz, 1983; Smart, 1998). Given that Grounded Theory was invented as a reaction to purely descriptive ethnography that failed to animate theory building (Glaser & Strauss, 2009), embracing these dual perspectives

- the near and the distant experiences, and the CA and ethnographic approaches
- is a direct and authentic expression of the original intent of Grounded Theory.

To engage in ethnography that bridges the near and distant experiences en route to creating a provisional theory, a researcher might commit to learning about the shared perspectives, practices, and words that a community and its members use in its interactions. Three techniques – "use of convergent data; the explication of linguistic classifications; and the examination of the life cycle" (Geertz, 1983, p. 156) – enable a researcher to piece together and present a richer sense of the reality constructed and understood by a conversation's participants. Each of these techniques expresses respect for the history of the community and the context of a studied conversation. The convergent data is historic in that it is an encapsulation of the shared perspectives that a community has cultivated over time; its memes. The linguistic classifications are historic in that, again, they are shared expressions of understanding that signal fluency in a community's discourse. And the life cycle examination is historic in that it is a means of gathering stories about "lines of development in the community's history and examining these stories as symbolic artifacts potentially rich in meaning" (Smart, 1998, p. 115).

Ethnographic details might be especially useful as an explanatory aid for CA studies conducted in unfamiliar or rarified settings (Maynard, 2006), including some workplace settings. For example, in initial medical interactions the doctor might ask more questions than the patient; this questioning approach to the interaction is both what the doctor does and what the doctor's role is. Without an ethnographic awareness and articulation of this cultural connection between questions and a doctor's "doing being" (Schegloff, 1991), the detailed analysis of the conversation might develop a less rather than more accurate description of the interaction. Because few people have had the experience of founding a high-tech venture or of participating in a lean startup contest, the context of this research might be considered rare. Consequently, ethnographic descriptions are essential in the context of this doctoral research; they might amend stereotypical expectations about entrepreneurs (Carr & Beaver, 2002; Down & Warren, 2008; Ogbor, 2000) or entrepre-

neurial contests that could interfere with the analysis or the readers' ability to appreciate the study and its findings.

CA's focus on the specifics of language also can be enhanced by the use of descriptive statistics. Quantifying the coded data is not without controversy; some scholars have cautioned that numeric representation is not a substitute for a demonstration of the situated accomplishments of the language as used (Schegloff, 1993). However, other scholars have argued that the quantification of coded data has value in select circumstances providing that the primary work of the analysis adhered to the situated and reflexive orientation of CA (Heritage, 1995, 1999). For example, a study that used CA to investigate the interactions of a newspaper's editorial team meetings and then quantified the coded data was able to reveal a relationship between the way the editors talked about the story and the story's eventual placement in the paper (Clayman & Ann, 1998). And more recently, a study that paired CA with descriptive statics was able to show interactional evidence for changing journalistic standards between 1953 and 2000 (Clayman, Elliott, Heritage, & Laurie, 2006). In these and other studies that attempt to answer questions about the relationship between communication and exogenous variables, the pairing of CA's classically qualitative data with descriptive statics has proven to have merit. Thus, in this study which asks questions about possible relationships between entrepreneurial team conversations and performance in a contest, CA is coupled with descriptive statistics.

As is widely understood, CA and ethnography both rely upon cases as the objects of their study. Cases enable a researcher to study a phenomenon in-depth within set boundaries for time and activities (Creswell, 2003, p. 15). They are valuable for theory-building work, such as this research project, because they are likely to generate new theory, posit testable constructs for future research, and be empirically valid given the close connection between data and theory (Eisenhardt, 1989, p. 547).

## **Piloting Efforts**

Although a full pilot project was not undertaken as preparation for this research study, attention was given to the development of necessary skills through select activities. For example, to experience the process of transcribing, coding, and analyzing naturally occurring intra-team conversations, I gained access to unedited documentary video footage of an engineering team at work. Because the three hours of footage had been shot years ago by a professional film-maker who was present during the filming, this material did not serve as a pilot for my project's data collection. However, with the footage I was able to develop my techniques for working with recorded data and conducting Conversation Analysis.

## **Data Collection**

Conducting this research study required a partnership with a lean startup entrepreneurship competition. Such a contest would provide access to a set of teams that were engaged in the act of entrepreneurial innovation and a means of identifying performance levels within a time frame suitable for a research study. Moreover, a lean startup competition would ensure that teams were being judged on their minimum viable products – not on the completion of a business plan or the presentation of a pitch. A web search for lean startup contests indicated that the MIT Accelerate Contest would be an appropriate partner.

The Accelerate Contest was selected, in part, because of its geographical location and timing; both were easy to integrate into this research project. More importantly, the Accelerate Contest was selected because it is the lean-startup component of the MIT \$100K Competition. Since the inception of the \$100K's current award structure, all of the event's winners have been able to build thriving ventures. As indicated in Appendix Three, all of the winning teams have raised significant funds or achieved a favorable exit. The Accelerate Contest is too young to have a long history of spawning successful ventures. However, because the rigor of the \$100K's judging will be present in its judging there is reason to believe that the Ac-

celerate Contest winners also will be poised for continued success. While contest placement can never be a perfect prediction of real-world, long-term success, winning the Accelerate Contest seems to provide a reasonable proxy for success in this study.

A faculty member affiliated with the MIT Accelerate Contest was contacted. After a series of emails, an in-person meeting with one of the student leaders occurred, and within days approval was granted: teams could be invited to participate via email and an in-person presentation, and individual teams could choose whether or not to follow-up.

Nine teams expressed interest. Meetings were scheduled with these teams to review the details of the project and the eligibility requirements. To be eligible to participate in this study, teams had to have more than one member and agree to record at least one in-person meeting with the entire team speaking English during the arc of the contest. Six teams were selected and were loaned GoPro cameras as their main recording device and Sony digital voice recorders as a backup device. After signing consent forms, the teams were instructed on how to use the devices and were asked to record their intra-team meetings during the weeks of the Contest with both devices in each meeting. Upon the conclusion of the Contest and the announcement of the team rankings, all recording devices were reclaimed.

All of the recorded data from all teams – approximately thirty hours in total – was reviewed using an open-coding approach; an iterative process that begins with unmotivated looking/listening and eventually results in a set of codes to foster the analysis of selected episodes (Strauss & Corbin, 1990). The emergent codes guided the qualitative analysis that was rendered within the Atlas.ti software package.

The full set of data includes conversations from one winning team, one losing team (eliminated after the first round of judging), and other middle-ranking teams. (See Table 3.1.) It includes video and audio recordings. However, the micro-analysis has been performed on only the audio recordings. The visual data was not always available and was used only verify the speaker.

Table 3.1. Description of Teams

Assigned Name for Team	Yellow	Green	Teal	Orange	Purple	Pink
Team Size	2	4	2	3	3	4
Functional Composition	1 Business 1 Engineer	3 Business 1 Engineer	2 Business	3 Engineer	1 Business 2 Engineer	2 Business 2 Engineer
Expertise of Lead Entrepreneur	Business	Engineer	Business	Engineer	Engineer	Business
Gender of Lead Entrepreneur	Female	Male	Male	Female	Female	Male
Gender Mix	1 Male 1 Female	2 Male 2 Female	2 Male	2 Male 1 Female	1 Male 2 Female	4 Male
Hours Recorded	1	7	2	10.5	4	5
Meetings Recorded	1	6	1	10	4	10
Minutes Included in Micro-analysis	30	66	0	0	0	0
Table at Demo Show	Yes	No	No	Yes	Yes	Yes
Included in Study	Yes	Yes	No	No	No	No
Reason for Removal from the Data Set			Non-team member on recording	Distortion on some recordings; non-team members present sometimes	Not whole team; one person on skype	Not whole team

## Data Analysis

To select episodes relevant to the research, a process of open coding was used; the recorded meetings were reviewed multiple times and making notes about their content and flow. After this phase of “unmotivated looking” (Psathas, 1995a, p. 45), attention was focused on the data from the highest- and lowest-performing teams. These teams’ data fully adhered to the eligibility requirements; all team members were present for the recorded meetings. Selecting the top and bottom teams also allowed the inquiry to “maximize the similarity and differences” of the data in line

with Grounded Theory (Creswell, 2003, p. 14). A general guide to the contours of these teams' conversations was created. The guide included time markers and moments which seemed to stand out in some way from the rest of the recorded interactions. These intuitive notations were taken for two reasons: 1) these moments could become relevant to the analysis and 2) no researcher was physically present for any of the conversations and this memory device helped compensate for a lack of lived memory related to the meetings.

The recordings for the teams with the highest and lowest rankings from the contest were transcribed. Approximately 60 minutes of conversation were transcribed for the Yellow Team, and 300 minutes were transcribed for the Green Team. Recorded conversations that were unrelated to the teams' entrepreneurial quest were not transcribed; conversations about social plans, for example. During the process of transcription interesting episodes of conversation were flagged: instances in which team members were puzzled or surprised by market reactions, for example. At this point in the analysis the names of the teams and team members were changed to maintain the privacy of the participants.

With the basic transcriptions completed, the conversational episodes worthy of analysis began to be evident. Both teams appeared to be grappling with two main concerns:

- How is our team doing in the contest?
- How is our product vision aligned/misaligned with the knowledge we now have about customer interest and market potential?

The uncertainty expressed in these meta-questions seemed similar to but distinct from the main categories of uncertainty (state, effect, and response) often referenced in organizational theory (Milliken, 1987). Entrepreneurially relevant questions related to Milliken's framework might be expressed as: (1) What's happening in the market? (state uncertainty), (2) How will it impact our team? (effect uncer-

tainty), and (3) What can we do about it? (response uncertainty) (McMullen & Shepherd, 2006, p. 125). Similarly, the uncertainty captured in the meta-questions seemed to reside outside of the types of uncertainty often associated with entrepreneurs: Knightian uncertainty, goal ambiguity, and isotropy (Sarasvathy, 2008, p. xi).

Again, while the meta-questions found in the data seem related to these existing categories of uncertainty, they do not match them. The data-driven categories acknowledge external uncertainties – the criteria of the contest judges, the feedback from advisors, etc. – but they expand the internal categories of uncertainty to new dimensions. For example, the data-based questions seem to honor the uncertainties of interpretation. Simply having feedback from a customer, for example, may not point to a clear path to success; the meanings of the information could be many and must be assigned by the team. In other words, the information a team seeks and collects can pose its own challenge for the team because it suggests a variety of possible meanings (Barton, 2010, p. 66; Weick, 2001, p. 251) and, by extension, an array of possible next steps. The data-driven meta-questions recognize the uncertainty of figuring out what the choices are while the classic questions seem to imply only the uncertainty of selecting among choices. Because conversations oriented around themes of uncertainty could contain sensemaking language forms, both the contest-related and product-related interactions were deemed worthy of analysis and were noted with Contest or Product Episode codes. Approximately 30 minutes of the Yellow Team's data and 66 minutes of the Green Team's data were represented by these Episode types.

By using the recordings and the transcriptions, the beginning and ending points for these episodes of uncertainty were identified and color coded – purple for Product and red for Contest Episodes. In the spirit of CA's ethnomethodological roots, the episodes were bracketed by natural breaks occurring in the interactions; not with imposed breaks for the convenience of the research. Once the Product Episodes were highlighted, conversational segments devoted to validating the minimum via-



ble product's acceptance or growth potential were noted. They were assigned an Assumption-type code (e.g. Hypo Type Acceptance or Hypo Type Growth) along with a Product Episode code.

The color-coded documents were uploaded into the qualitative analysis software program Atlas ti along with the initial Assumption-type codes and individual speaker codes. In an iterative process of description, analysis, and interpretation (Wolcott, 1994), I started to code the Episodes utterance by utterance by noting the interactional work each utterance was doing in the context of the conversation. Occasionally I would review my codes and attempt to redefine and reassign them with greater accuracy if they seemed to be becoming too abstract or concentrated (Miles & Huberman, 1994). Continuing to follow an open coding approach to research (Strauss & Corbin, 1990), I kept a log of my evolving codes as they changed, expanded, and concentrated over time. (I also continued to maintain a journal of impressions that I had begun during the collection of data.) Occasionally, I compared my grounded codes and categories with concepts and language forms in the existing literature (Glaser & Strauss, 2009). Most notably I considered possible relationships between my codes and the three dimensions of sensemaking – Information, Meaning, and Action – that were indicated by Thomas, Clark and Gioia (1993). I also considered possible intersections between my codes and language markers previously articulated in the literature (Wilson, 2007).

After months of iteratively improving the emerging codes I sought a second coder to engage in a peer debriefing; a review with knowledgeable colleagues “to stimulate the consideration and exploration of additional perspectives and explanations” that could be found in the data and the codes (Long & Johnson, 2000, p. 34). By integrating the points of consideration raised by a peer into the emerging code-book, the overall research is strengthened; the process provides a kind of triangulation that enhances the credibility of qualitative work (Wahyuni, 2012).

During December 2013 I worked with a doctoral candidate at Smeal School of Business at the Pennsylvania State University who shares an interest in sense-making and has completed coursework in qualitative research. In eight hours of meetings we discussed the codes and made changes to the code book. Two clusters of codes – those embedded in Action: Align and in Action: Plan – seemed to inspire the most questions and concerns for the second coder throughout our debriefings. He also expressed an alternative interpretation of Action: Levity.

Initially I had considered utterances of Acknowledge to be Information-oriented, but the second coder was adamant that utterances of Acknowledgement were Actions. I agreed with his reasoning and re-assigned the Acknowledge code to be part of Action: Align. The second coder's concern with Action: Plan seemed to stem from confusion about the subcodes of Propose and Coordinate. This was not fully resolved during our sessions even though he could consistently identify utterances that I had coded as Action: Plan. And while he also could consistently identify utterances that I had coded as Action: Levity as Action: Levity, he maintained that he believed these utterances might be better coded as if the speakers were not joking.

Eventually, we were able to code 93% of the utterances the same way at the Aggregate level (Information, Meaning, and Action) and 73.56% at the Primary code level. Had this research been a quantitative project, these levels of similarity would fall within an acceptable level for theory building. (Scholars differ about the reliability rates that can be considered acceptable for theory building, but some advocate 70% as reasonable (Neuendorf, 2002).) However, this research is qualitative and exploratory; the peer debriefings were included not to achieve a specific level of reliability but to enhance the credibility and trustworthiness of the research.

## **Code Descriptions**

Over time the codes were transformed from their initial descriptive forms into a nested collection of Aggregate codes and related Primary codes with sub-forms. The Aggregate codes of Information, Meaning, and Action that were borrowed from

the existing literature (Thomas et al., 1993) seemed to be sufficient containers for the entirety of the utterances included in the analysis. Structural elements were also noted; the Product and Contest Episode types were imposed prior to the detailed coding process and utterances in the form of questions were marked from a bottom-up reading of the transcripts. The code book complete with sample utterances is included in Appendix One.

### Primary codes within the Information Aggregate

Codes within the Information Aggregate describe the conversational activities that arose from the practice of seeking or sharing data, facts, or created elements (such as spread sheet numbers) that were treated by the speakers as facts. Primary codes and their sub-forms include:

Seek: Utterances coded as Seek were used by speakers to gather data and facts. Sub-forms of Seek include Check, Data, Personal, and Resource. Utterances coded as *Seek: Check* marked efforts by speakers to be reminded of a fact. *Seek: Data* utterances were attempts by speakers to gather information about customers, advisors, or teachers. Utterances coded for *Seek: Personal* were requests of a team member about his/her situation. These utterances might include questions such as “Are you okay?” that treat the other speaker’s assessment of well-being as a fact. Utterances coded for *Seek: Resource* marked efforts by speakers to gather information about available money or time.

Share: Utterances coded as Share were used in the conversation to provide facts and fact-like information to team mates. Sub-forms include Brainstorm, Correct, Data, Numbers, Personal, and Vision. Utterances coded as *Share: Brainstorm* expressed product options that were not connected to input from the ecosystem of customers, advisors, and teachers. Utterances coded for *Share: Correct* were used by speakers to add accuracy to a recently made statement. Utterances coded for *Share: Data* were used by speakers to provide information from the ecosystem to team mates. The Numbers-coded utterances were references to constructed in-

formation – such as spread sheet numbers or a slide deck – that were treated as facts in the context of the conversation. Utterances coded as *Share: Personal* were efforts by a speaker to share information about his or her physical or social state; again these contributions were treated by team mates as facts. Utterances coded for *Share: Vision* were efforts by a speaker to convey the future possibilities or underlying theories about the product; they were not anchored in feedback from the ecosystem but were treated in the conversations as facts.

Reveal: Utterances coded as Reveal are similar to those associated with Share. However, Reveal was made into a Primary code to avoid over-building the Share code and to recognize the subtle difference in the vulnerability levels of the disclosed information. Sub-forms of Reveal include Lack of Knowledge and Feelings. The sub-form *Reveal: Lack of knowledge* was assigned to utterances that divulged a speaker's acknowledgement of missing information and an incomplete understanding. Utterances coded for *Reveal: Feelings* disclosed emotion.

#### Primary Codes within the Meaning Aggregate

Codes that are contained within the Meaning Aggregate describe the conversational activities that arose from the practice of seeking or sharing opinions or beliefs. Primary codes and their sub-forms include:

Claim: Utterances coded as Claim were assertions of belief made by speakers. Sub-forms include Conditional and Absolute. *Claim: Conditional* utterances were statements about the situation or the future that reserved a level of commitment. These provisional assessments might include grammatically conditional words -- discrepancy words such as could or might – but these were not defining indicators for this type of Claim. Utterances coded as *Claim: Absolute* were statements that expressed a high level of certainty or lack of other alternatives.

Clarify: Utterances coded as Clarify were used by speakers to make sure they had understood the other team members or to make sure they were understood by the

other team members. The sub-forms of Clarify include Check and Volunteer. Utterances noted as *Clarify: Check* were efforts by a speaker to double-check their understanding of another speaker's contribution. Utterances marked as *Clarify: Volunteer* were efforts by a speaker to expand upon their reasoning to make sure the other participants' had a clear understanding of the point being made.

Compare: Utterances coded as Compare were used by speakers to hold together a set of experiences, inputs, or products as a means of understanding them. Sub-forms include Experiences, Data, and Products. Utterances coded as *Compare: Experiences* marked a speaker's effort to compare situations, lived or expected. Utterances coded as *Compare: Data* noted efforts by a speaker to juxtapose two pieces of feedback from the ecosystem. Utterances coded as *Compare: Products* signified efforts by a speaker to consider their product against a competitor's.

Disregard: Utterances coded *Disregard* were comments by a speaker that conveyed a belief that the speaker knew best or had superior knowledge. These are prideful statements. There were no sub-forms.

Reconsider: Utterances coded as *Reconsider* were self-reflective changes of mind. There were no sub-forms.

Seek Opinion: Utterances coded for *Seek Opinion* were open requests for another speaker to share his/her point of view. There were no sub-forms.

Test: Utterances coded for *Test* were requests for evidence to support another person's conclusion or belief. There were no sub-forms.

### Primary Codes within the Action Aggregate

Codes that are contained within the Action Aggregate describe the conversational activities that arose from the practice of directing or supporting the efforts of the team and its members. Primary codes and their sub-forms include:

Affirmation: Utterances coded for *Action: Affirmation* were efforts by a speaker to say explicitly positive things about another team member and his/her contributions. There were no sub-forms.

Alignment: Utterances coded for Alignment included efforts by speakers to Agree or Confirm, Acknowledge, or Disagree/Contrast with the statements of another speaker. Utterances coded for *Alignment: Agree/Confirm* were expressions of agreement or approval with a recent statement. Utterances coded for *Alignment: Acknowledge* were indications of basic attention or comprehension. Utterances coded for *Alignment: Disagree/Contrast* were statements of difference.

Facilitate: Utterances coded for *Facilitate* were efforts by speakers to keep the meeting on topic. There were no sub-forms.

Levity: Utterances coded for *Levity* were jokes and laughter. There were no sub-forms.

Influence: Utterances coded for Influence were efforts by speakers to direct, change, or stop a team mate's assessments. Sub-forms included Persuade and Defend. Utterances coded for *Influence: Persuade* were efforts by a speaker to impress a team member. Utterances coded for *Influence: Defend* were justifications (signaling responsibility) or excuses (signaling lack of ownership) for behavior or status of project.

Plan: Utterances coded for Plan were statements attempting to organize future actions. Final sub-forms include Coordinate and Propose. Utterances coded for *Plan: Coordinate* were statements that worked to organize future actions generally while those coded for *Plan: Propose* were statements of specific action possibilities.

Suspend: Utterances coded for *Suspend* were efforts by a speaker to postpone actions. There were no sub-forms.

### Structural Codes

As previously mentioned, codes were also assigned to utterances indicate Segment type and Speaker. These architectural codes were applied to utterances from the top-down; not bottom up as the rest of the codes were. (However, as stated early, the utterances selected as Product Episodes – the parent code for the Segments – emerged from a bottom-up assessment of the recorded data.)

An additional structural code was rendered through a grounded review of the data: direct questions. Tag questions, rhetorical questions, and other question forms were not included in this code type.

### Integrating Coded Utterances with Language Forms in the Literature

In Chapter Two, the section on Sensemaking presented various language forms related to resilience, an attribute associated with high-performance teams. While this study's codes have been created from a micro-analysis of the data, some of the resulting code types do align with the language forms found in the literature. (See Table 3.2.)

As the previous chapter indicated, the four dimensions of resilience --, Attitudes of Wisdom and Doubt, Heedful Inter-relating, and Virtual Role Systems – have expressions in conversational language. The connection between the literature's language forms and this study's codes are presented in the Table 3.2. Not all codes had a corresponding language form in the existing literature. Also important to note: the language feature most associated with Virtual Role Systems is the regulated roles of speakers (Barske, 2009; Cazden, 1987; Rixon, McWaters, & Rixon, 2006). For example, if a single team member were contributing all of the utterances coded for Action: Facilitate, s/he might own responsibility for the group's attention setting. Conversely, if all team members were contributing utterances coded for Action: Facilitate, the team might have a more resilient virtual role system. It is the ownership of ways of speaking that reveals the role system of a team.

Table 3.2. Integration of Sensemaking Literature and Codes

Resilience Trait	Impact	Language in Literature	Attribution	Code Informed by Micro-analysis
<b>Improvisation and Bricolage</b>	Enhance	Help giving	Hargadon and Bechky, 2006	Meaning: Clarify: Volunteer
	Enhance	Help seeking	Hargadon and Bechky, 2006	Information: Seek: Check Information: Reveal: Lack of Knowledge Meaning: Clarify: Check Meaning: Seek: Opinion
	Enhance	Use of conditional language	Langer 1992, 2002	Meaning: Claim: Conditional
	Enhance	<i>Use of language forms that signal a flexible approach</i>	<i>Extrapolated from Langer 1992, 2002</i>	Action: Levity Meaning: Reconsider
	Hinder	Use of fixed Language	Langer 1992, 2002	Meaning: Claim: Absolute
	Hinder	<i>Use of language forms that signal an inflexible approach</i>	<i>Extrapolated from Langer 1992, 2002</i>	Information: Share: Vision
<b>Attitudes of Wisdom and Doubt</b>	Enhance	Acknowledgement of self-limitations	Owens, 2009	Information: Seek: Check Meaning: Clarify: Check
	Enhance	Appreciation for abilities and contributions of others	Owens, 2009	Meaning: Seek: Opinion Action: Affirmation
	Hinder	<i>Lack of appreciation for abilities and contributions of others</i>	<i>Extrapolation from Owens, 2009</i>	Meaning: Disregard
	Enhance	Learning stance	Owens, 2009	Information: Reveal: Lack of Knowledge Meaning: Claim: Conditional Meaning: Reconsider
	Hinder	<i>Non-learning stance</i>	<i>Extrapolation from Owens, 2009</i>	Information: Share: Vision Meaning: Claim: Absolute Action: Influence
	Enhance	Low level of focus on the self	Owens, 2009	Meaning; Clarify: Volunteer
<b>Heedful Interactions</b>	Enhance	Respect for the reports and perspectives of others	Campbell, 1990	Information: Seek: Check Meaning: Clarify: Check Meaning; Clarify :Volunteer Meaning: Reconsider Meaning: Seek: Opinion Action: Suspend
	Hinder	<i>Lack of respect for the reports and perspectives of others</i>	<i>Extrapolation from Campbell, 1990</i>	Information: Share: Vision Meaning: Claim: Absolute Action: Influence



Table 3.2. – *Continued* --

<b>Resilience Trait</b>	<b>Impact</b>	<b>Language in Literature</b>	<b>Attribution</b>	<b>Code Informed by Micro-analysis</b>
	Enhance	Mutual support	Bandura, 1998; Caproni, 2001; Sutcliffe and Vogus, 2003	Action: Affirmation
	Hinder	<i>Lack of mutual support</i>	<i>Extrapolation from Bandura, 1998; Caproni, 2001; Sutcliffe and Vogus, 2003</i>	Meaning: Disregard
<b>Virtual Role System</b>	Enhance	<i>Use of language forms shared by team members</i>	<i>Extrapolated from Barske, 2009; Rixon, McWaters, &amp; Rixon, 2006; Wilson, 2007</i>	<i>Redundant use of any code across team</i>

### **Samples from the Coded Data**

Two teams, representing two different performance levels as determined by their placement in the Contest, were studied in this project. The Yellow Team was a winning team in the Contest; The Green Team was eliminated in the first round of judging. A rich description of the teams and their recorded data is presented in this section along with excerpts from the coded transcripts.

#### Yellow Team: High-performance team

The Yellow Team is a two-person team. One man, Seth, with technical expertise and one woman, Shahrnaz, with business skills are collaborating on the creation of a consumer-oriented device related to wellness. Seth has entrepreneurial experience from his participation in a previous venture with a very different market focus. He also has more than 12 years of experience in device-based research and manufacturing. Shahrnaz is a first-time entrepreneur who has five years of experience in sales and marketing strategy with two leading global high-tech companies. Seth has already completed his PhD in Chemical Engineering; Shahrnaz is an MIT MBA

student at the time of the contest. In addition to being a founder, Shahrnaz is also a lead user; her personal profile means that she would be a customer for their product if it were to go to market.

The two met and began discussions about the possibility of working together on this product and venture at an event for people interested in entrepreneurship. They have been working together for a few months, often from different geographical locations. A functioning prototype of their sensor-based product had been completed by the time of the contest.

The team made it to the final round of the contest and got to pitch to the judges at the Finale event. They finished among the winning teams and took home a \$2,000 award. Their winning status afforded them automatic entry into the final phase of the three-stage MIT \$100K Contest.

The Yellow Team captured more than an hour of naturally-occurring conversation during the final days of the contest. All of their recorded material came from a single meeting. Approximately 30 minutes of conversation were included in the analysis.

An excerpt from their conversation shows Seth and Shahrnaz talking about their minimum viable product, specifically about feedback from a judge about the growth potential for their product. The transcription and coding preparations for data analysis attempt to capture the conversational impact of each utterance:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Shahrnaz</i>	<i>One thing that one of the early round judges gave in the feedback was that they don't think (.) that we're going to sell that many=</i>	<i>Product, Hypo Type Growth, Info: Share: Data</i>
<i>Seth</i>	<i>Yeah</i>	<i>Product, Hypo Type Growth, Action: Align: Acknowledge</i>
<i>Shahrnaz</i>	<i>=um (3) and (.3)</i>	<i>Product, Hypo Type Growth, Info: Continue</i>
<i>Seth</i>	<i>There's always that</i>	<i>Product, Hypo Type Growth, Meaning: Claim: Absolute</i>

<i>Shahrnaz</i>	<i>Right there's always that there's always that risk, ummm (.) but (.4) it I think it totally depends on our marketing and=</i>	<i>Product, Hypo Type Growth, Meaning: Reconsider</i>
<i>Seth</i>	<i>Yeah</i>	<i>Product, Hypo Type Growth, Action: Align: Agree/Confirm</i>
<i>Shahrnaz</i>	<i>=and and and our go to market strategy, but I just I have a hard time seeing that given like all the like anecdotal and (.2) data we have to confirm the market</i>	<i>Product, Hypo Type Growth, Meaning: Comparison</i>
<i>Seth</i>	<i>Yeah I agree um (.3) but we'll worry about that later, right?</i>	<i>Product, Hypo Type Growth, Action: Align: Agree/Confirm, Action: Suspend</i>
<i>Shahrnaz</i>	<i>Yeah agreed, ok</i>	<i>Product, Hypo Type Growth, Action: Align: Agree/Confirm</i>

The excerpt includes markers of Jeffersonian notation to capture the rhythms and flow of the utterances as they occurred. Pauses are noted in parentheses, a recognizable but very short pause of less than 2 seconds is noted by (.) and longer pauses include the number of seconds within the parentheses. Utterances that are tightly coupled are noted by the = symbol. The sample also highlights the final codes. This excerpt showcases the subtleties of coding utterances within CA. Seth has two utterances of the single word “yeah”, but one is coded as Action: Align: Acknowledge and other is coded as Action: Align: Agree/Confirm. A discourse analysis might have matched all occurrences of the word “yeah” with only one particular code. However, CA’s micro-analytical inductive approach strives to recognize the functional role of each utterance.

#### Green Team: Low-performance team

The Green Team is a four-person team comprised of two men, Abram and Yoichi, and two women, Carrie and Vera. Abram is a PhD candidate with technical abilities. The remaining team members are MBA students with business backgrounds. None of them have previous entrepreneurial experience. They are collaborating on the creation of a software-as-service venture with an educational orientation for a consumer market. The technology at the heart of the entrepreneurial activity is

springing from Abram's doctoral research. A functioning prototype of their offering is under development by the time of the contest.

This team was eliminated in the first round of judging. Consequently they were not part of the Finale event. The team disbanded after the contest concluded for them.

The Green Team captured approximately 7 hours of naturally-occurring conversation during the arc of the contest prior to their elimination. Their recorded material came from multiple meetings over approximately four weeks. Approximately 66 minutes of conversation were included in the analysis.

In the example below, the team is talking about their participation in the contest, specifically about the readiness of their demo and the expectations of the judges. Their interactions were treated with Jeffersonian notation protocols, and their utterances were coded through an inductive process. Together these preparations for data analysis produced a detailed encapsulation of the team's conversation.

<i>Speaker</i>	<i>Utterance</i>	<i>Codes</i>
<i>Carrie</i>	<i>Like still we still need to do a demo at the end, right? if we have huge stories to show and can even have a video or something of a kid</i>	<i>Contest</i> <i>Meaning: Clarify: Check</i>
<i>Yoichi</i>	<i>[yeah]</i>	<i>Contest</i> <i>Action: Align: Agree/Confirm</i>
<i>Carrie</i>	<i>using one?(.)</i>	<i>Contest</i> <i>Meaning: Claim: Conditional</i>
<i>Abram</i>	<i>Yeah</i>	<i>Contest</i> <i>Action: Align: Acknowledge</i>
<i>Vera</i>	<i>that would [be good]</i>	<i>Contest</i> <i>Meaning: Claim: Absolute</i>
<i>Carrie</i>	<i>[we'd be] golden. Like that would be and I feel personally like that would be a good(.)</i>	<i>Contest</i> <i>Meaning Claim: Conditional</i>
<i>Abram</i>	<i>Yeah yeah yeah and <u>already</u> it's like I</i>	<i>Contest</i>

	<i>mean you</i>	<i>Action: Align: Agree/Confirm</i>
Carrie	<i>[yeah]</i>	<i>Contest, Action: Align: Acknowledge</i>
Abram	<i>know if you have an android device you can install this application and download 4 stories to your phone</i>	<i>Contest</i> <i>Meaning: Claim: Absolute</i>
Carrie	<i>Yeah</i>	<i>Contest</i> <i>Action: Align: Agree/Confirm</i>
Abram	<i>that's a pretty f-ing good de:mo</i>	<i>Contest</i> <i>Meaning: Disregard</i>
Carrie	<i><u>Oh yeah</u></i>	<i>Contest</i> <i>Action: Align: Agree/Confirm</i>

The excerpt includes additional markers of Jeffersonian notation: bracket symbols denote overlapping speech, a colon within a word signifies a prolonged sound, and underlined text marks emphasized speech. The excerpt showcases additional features of the inductively-developed codes and their application in a CA project. For example, even though Abram's utterance about the power of the current demo is a claim made with certainty it is coded as Meaning: Disregard rather than Meaning: Claim: Absolute because its intonation signals prideful ownership. Similarly, Vera's utterance is coded Meaning: Claim: Absolute even though it contains the word "would" – which could be typically classified as a discrepancy word related to conditional statements. Because she is responding to Carrie's assertion, Vera's utterance is more similar to Action: Align: Agree/Confirm in this analysis than it is to Meaning: Claim: Conditional. However, the utterance was finally associated with Meaning: Claim: Absolute because her delivery of the utterance suggests that she is offering a firm assessment of the situation (as first expressed by Carrie.)

### **Originality of the Research and Its Potential Impact**

The research uses an unusual means of collecting data. By empowering research subjects to record themselves with (wearable) devices, the technology removes the

potential disruption of a researcher's presence. The recording device may be its own disruptive force, of course, but perhaps less so than the presence of the researcher. Nevertheless, the use of the recording devices in the data collection process adds a component of novelty to the data collection for this research.

Having naturally-occurring conversations, recorded by any means, of innovative entrepreneurial teams in-action is very rare. Analysis of the recorded intra-team conversations may reveal behaviors of innovative entrepreneurial teams that cannot be identified by other forms of data. By micro-analyzing the interactions of the team members while they work this research will be able to examine how teams exchange information, make sense of their situation(s), solve challenges, and essentially talk an innovation into being. Whether the findings from the research were to expand, support, or contradict existing research about entrepreneurial teams conducted at a different level of granularity, they would have the potential to add to the academic discourse, especially the entrepreneurial cognition literature. The study also is positioned to contribute to the talk-in-interaction literature by its ability to add to the conversational markers recognized in the interactions of other teams at work.

The findings from this study also have the potential to impact entrepreneurship education. While conventional wisdom about entrepreneurship underscores the importance of a good team, the definition of such a team tends to be static – team members should have entrepreneurial experience; a history of working together, complementary areas of expertise, etc. Little, if any, emphasis is given to the behavioral dimensions – including the conversational competence – of team members.

## **Weaknesses and Contingencies**

Often criticized about its ability to be replicated and generalized (Seale, 1999), qualitative research tends to be assessed for quality along other trajectories. Four frequently used criteria include: credibility, transferability, dependability, and con-

firmability (Wahyuni, 2012). In concert with these conventions, this research process included peer debriefings, thick descriptions of the context for the research, and transparency about the research processes and tools to attend to credibility, transferability, and dependability respectively. Matters of confirmability were addressed through the peer debriefing, triangulation of methods, and a data audit. However, other specific weaknesses may be present in the design and execution of this research.

Self-selection is a possible weakness in the study design: perhaps only the most confident or accomplished teams chose to participate in the research, for example. However, even if only exceptional teams have participated, a range of performance levels and conversational episodes have been captured.

Another possible perceived weakness is the small sample size. By design this is not a quantitative study with a large representative sample; it is a descriptive study that is crafted to make contributions of an exploratory nature. The cases selected for analysis were chosen for their contrasting profiles (as deemed by the contest results) and have been treated as unique (and not necessarily representative) cases throughout the analytic process.

Even with the teams that participated every minute of every conversation was not captured. Moreover, only the verbal conversations within team meetings – not emails, text messages, or phone calls, for example – were captured. To compensate for this possible weakness related to an incomplete data set, data from additional sources -- the field observation of the contest kickoff and finale events, for example – was integrated to enhance and improve the descriptions of the teams and their verbal sensemaking.

Because each utterance was given a single code, it is possible that some nuances of the utterances were not acknowledged in the tabulation of codes. The utterances were coded line-by-line to appreciate the situated construction of the conversation by the participants over time. In this framework it is possible that a statement related to voluntary assistance, for example, served a different purpose in the mo-

mentum of the conversation. So while voluntary offers of assistance would probably have been associated with the code Meaning: Clarify: Volunteer it is possible that these utterances could have been assigned a different code.

The choice to include a quantitative means of analyzing the coded data might be worrisome to some practitioners of CA. Faulty conclusions can arise if the numerical approach to understanding the data takes precedence. For example, if all speech overlaps are coded with the predetermined category “attempt to dominate the conversation,” the overlapping utterances that are understood by the participants as excited encouragement will be missed and misunderstood by the researcher. However, in this work the categories of codes that frame the results have emerged from a close description of empirical examples not from predetermined terms. The quantitative aspects are used as an alternative view into the selected cases; not as the aim of the inquiry.

The quantitative aspects of the research design also helped to guard against another potential weakness: missed patterns in the qualitative data. Alternative interpretations or trends within the data are easy to overlook. By examining the data through a quantitative lens the impressions that had formed from the qualitative engagement with the data could be confirmed or reconsidered.

The possible weakness of bias is a significant concern that I attempted to address throughout the research process. Having a history with the university that hosts the contest – I took an entrepreneurship class there for credit; I worked there for a year; and I’ve been a judge three times for a different annual entrepreneurship contest hosted by the university -- I may have a strong bias that leads me to see in the data what I already believe from experience. To guard against this possible weakness, I regularly reflected on my interpretive process, privately and publically. I wrote memos to myself throughout the research process, and I participated in an interpretive community -- with my doctoral supervisors, with peers and scholars at doctoral consortia, conferences, and at universities in Massachusetts and Pennsylvania (USA).



Coding inconsistencies could be another possible weakness. Having the second researcher code samples of the transcripts has helped to establish a baseline standard similar to those associated with reliability. However, this kind of research is inherently interpretive; another researcher might have found different ways to roll-up the grounded codes and have found different patterns within the same data. The quantitative dimension of the analysis enabled me to find and correct unintentional coding attributions.

While the traditions of CA and ethnography have been chosen to attend to the verbal, inter-personal, and situated nature of entrepreneurial innovation these approaches cannot capture all facets of the teams' interactions. For example, the speakers' use of pronouns has been cited in the literature as an important dimension of team interaction that would be missed by CA and ethnography (J. B. Sexton & Helmreich, 2003). A cursory exploration of the data from a Content and Text Analysis perspective was undertaken near the end of the analysis period aided by the Linguistic Inquiry and Word Count software program ([www.liwc.net](http://www.liwc.net)). This superficial look at the data from an alternative perspective provided not only another link to the literature but a means of checking the impressions of the data that had formed through the CA and ethnographic work.

This research has been designed to explore this study's orienting questions about the verbal sensemaking behaviors of entrepreneurial innovation teams. Before delving into the findings from the analysis of team conversations, this document will present an ethnographic sketch of the workplace that surrounds the studied entrepreneurial innovation teams.

## **CHAPTER FOUR: ETHNOGRAPHY OF AN ENTREPRENEURIAL WORKPLACE**

Because few people have been part of a founding team, an ethnographic portrait of an entrepreneurial work setting might be valuable to some readers. This chapter presents a coordinated ethnographic case study from the context of this study, a lean startup contest sponsored by a US university. The ethnography explores how the university's entrepreneurial community stimulates and supports high-tech innovation and high-growth entrepreneurship; it suggests that the community and the contest in particular foster innovation by cultivating an appreciation for reflection. The analysis of the cases juxtaposes theory about entrepreneurial education with conceptual frameworks from psychology and social psychology to illuminate the value of inheritance – and reflection – in the innovation process. By exploring innovation as a reciprocal dimension of history this ethnography connects entrepreneurial education to broader concepts about the entrepreneurial process and the lean startup approach to innovative entrepreneurship.

### **The Power of Place**

As you enter the Trust Center for Entrepreneurship at the Massachusetts Institute of Technology you immediately notice the floor-to-ceiling white board behind the receptionist's desk. On it is a large drawing in erasable markers of a pirate ship. The pirates are a friendly bunch; their single-dot eyes and single-line smiles welcome all aboard. Written on the white board next to the sketch is a quote attributed to Steve Jobs, the founder of Apple, Inc.: "It's more fun to be a pirate than to join the Navy."

The pirate theme shows up repeatedly – in stickers given to people who participate in the Center's activities, in the Trust Center logo, and on a flag in a suite of on-campus offices reserved for student-run startups – and captures part of the spirit of this place. Being a disruptive force is not necessarily a bad thing here. Setting sail aboard your own proverbial ship is not to be feared. And building your own culture even with all of the difficulties and unknowns that might include is preferable to

obeying without question a predetermined set of codes and conduct. In other words, the pirate theme signals to aspiring entrepreneurs that they are welcome here.

Plates 4.1 and 4.2: Images of the MIT Trust Center's Pirate Sticker and Logo



Source: MIT Trust Center

Of course, the Center doesn't stand alone. It is located on the campus of MIT, a highly-competitive research university in the US with a population of about 4,000 undergraduate and 6,000 graduate students enrolled across five schools (Management, Engineering, Science, Humanities, and Architecture). Mid-way between the Sloan School of Management and the university's renowned Media Lab (and two miles away from the Harvard University Campus and iLab), the Center contributes to the interdisciplinary, entrepreneurial spirit that has permeated this campus since at least the end of World War Two, if not since its founding in 1861. Known for its close connections between industry and academic research, MIT has been at the forefront of entrepreneurial education and experiential learning opportunities for decades.

With such a long-held commitment to the needs of aspiring entrepreneurs, perhaps the success of alumni-founded ventures should be expected. Still, the magnitude of that success warrants some attention: by one study's estimate, in 2003 MIT alumni were the founders of 25,800 then-active companies employing approximately 3.3 million people and generating annual revenues of \$2 trillion (Roberts & Eesley, 2009). The same study found that over 900 new companies had been founded by MIT alumni each year during the 1990s.

More important than the raw number of new ventures is the breakthrough nature of the technologies that give rise to these endeavors. Many alumni-founded compa-

nies are knowledge companies on the “cutting edge” of software and biotech and are likely to hold one or more patents for their technology (Roberts & Eesley, 2009). The founders of these ventures are what some would call innovative entrepreneurs – people who envision the possibility for a new venture with a distinctive value proposition (e.g., product features, pricing models, customizability, etc.) (Dyer et al., 2008). They build their ventures around disruptive technologies (Christensen, 1997).

Over the years numerous student and alumni clubs have formed to support the efforts of would-be innovative entrepreneurs. Chief among them might be the \$10K Competition, started in 1990. Fifty-four teams vied for a \$10,000 first-place, \$3,000 second-place and \$2,000 third-place prize that year. In 1996 the contest was renamed the \$50K; an alumni gift increased the prizes to \$30,000 for the winner and \$10,000 for two runners-up. In 2006 the competition was renamed again to reflect an increase in prize incentives and continues to be known today as the \$100K (MIT, 2014).

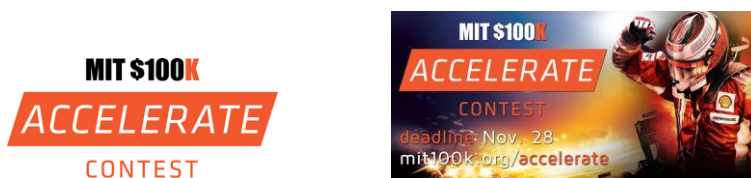
At the time of this writing, the \$100K is comprised of three different contests in succession over the course of the academic year: the Pitch Contest, the Accelerate Contest, and the Business Plan Contest. The second phase of the competition, the Accelerate Contest, begins with a call for applications from student teams in November and concludes with a Finale event with real-time demos, pitches, and awards three months later. As the MIT website describes the Accelerate Contest (capitals and italics as found in the original) (MIT, 2014):

Turn your idea into reality. Teams will work on creating a demo of their idea over December and January, and the best demos will present at the *ACCELERATE* Finale Show to a crowd of hundreds. The MIT \$100K will be providing resources and mentoring to help teams build their demos.

The contest’s logo is straight forward. With the word “accelerate” italicized and capitalized within a bright orange box (also tilted forward), the message is clear: con-

testants in this contest should expect a dynamic, high-energy environment and anticipate a lot of change in a little time. If the logo happens to fail at delivering that message, another image found with the contest's application form – that of a race car driver and flames – probably succeeds.

Plate 4.3: Accelerate Contest logo and related image



Source: MIT

For the contest more than 200 teams submitted applications by the November 28<sup>th</sup> deadline. Thirty-five teams –distributed across the specialties of emerging markets, energy, life sciences, mobile technology, product and services and web/information technology – were selected by a panel of eight judges to continue in the contest as semi-finalists. In December, each of those teams was provided with workspace, \$1,000 for product development, and access to industry experts. On December 10<sup>th</sup>, these semi-finalists attended a private Mentorship Kick-off Event. From that point until the next round of judging in February, the semi-finalists worked independently. In fact, the university was not in session in January; that month is the Independent Activities Period (IAP) during which students can informally take classes or work on individual projects. In early February the teams privately presented their progress to the judges. Six teams were named as finalists – one from each track – and a subset of the rest of the teams were invited to present again. A week later, two additional so-called wildcard teams were added to the list of finalists. On February 19<sup>th</sup> a public Finale event marked the end of the contest. One team received the grand prize of \$10,000. Two other teams were awarded \$2,000 prizes to continue to develop their ventures.

Throughout the duration of the contest, I embraced grounded theory (Glaser & Strauss, 2009); I recorded field notes and considered my experiences as they occurred to identify and explore possible emergent themes. The value of this ap-

proach was heightened because the contest happens only once each academic year – and only a single time for this particular set of contestants. Once I recognized the presence of the references to the past in a contest devoted to inventing the future I began to question why history is so present in this future-focused context? What purpose is it serving? What scale of storytelling – the person, the contest, the Institute, the nation – is highlighted? These questions and related ones animated my thoughts as I engaged in an iterative process of description, analysis, and interpretation (Wolcott, 1994).

What follows is a coordinated pair of ethnographic case studies that were conducted during the MIT Accelerate Contest. By examining two distinct moments that bracket the contest – the Kick-off and Finale events – this chapter attempts to convey the relationships between past and future – between history and innovation – in a contest devoted to entrepreneurial learning. In the cases, a combination of obscured and real names is used; names from the invitation-only event have been kept confidential whereas names from the public event have been revealed. The work aims to analyze how the conceptual proximity between history and innovation might contribute to the development of entrepreneurial practices and might relate to the lean startup philosophy for early-stage high-growth, high-tech entrepreneurship.

### **An Unfolding Legacy: The Mentorship Kick-off Meeting for Semi-finalists**

Late in the autumn, I received an email from one of the student organizers of the MIT \$100K contest. I had been invited to the Mentorship Kick-off Meeting for the Accelerate Contest. The student leader described the event as, “an in person meeting we hold to introduce the teams to their mentors and talk about the mentorship process and various deadlines and requirements of the contest.” (A. Francis, Personal communication, November 20, 2012). I accepted the invitation and attended the event on December 10<sup>th</sup>.

Held in E51-345, a tiered classroom in a building across the street from the Trust Center for Entrepreneurship, the event officially began at 7pm. From 6:30pm onwards sandwiches, sodas, and sweets were available in the hallway near the entrance to the room. As the semi-finalists arrived most team members snacked and chatted near the food; conversations seemed to focus on congratulatory remarks, “elevator pitches” (short descriptions of their ventures and innovations), and the origins of their teams’ ideas. It was a warm and festive atmosphere on a cold and damp New England evening, and while the teams seemed to be in no hurry to enter the classroom they happily transitioned when the organizers indicated that the time had come to officially begin.

Plate 4.4: Building E51, the Tang Center



Source: MIT

E51-345 holds a maximum of 128 people, and as the event began most seats were taken except for few in the very back. In attendance were members of the competing teams, mentors for the teams, organizers of the contest, and guest speakers. After thanking everyone for attending, the organizers gave an overview of the program for the evening which included an hour of orientation as a large group followed by an hour for individual teams to meet with their newly assigned mentors.

As expected, the Kick-off event highlighted details about the weeks to come. The contest’s timeline and key dates were reviewed. The judging criteria were reiterated. And the potential value of the available resources – especially the mentoring relationships – was rearticulated. However, the agenda’s focus was not devoted exclusively to talk of the future. The featured speakers – the lead entrepreneur from last year’s winning team and a founder from a non-winning team – anchored the contest and the work of the current contestants in stories of the past.

At the time of this study, the Accelerate Contest was in an early year of operation; it was added to the \$100K for the 2011-12 Competition. It was inserted between the high-level pitch contest and the detailed business plan and demo contest to acknowledge the need for iterative development of product ideas through sustained interactions with prospective customers and mentors early in the life-cycle of a new venture. The contest encourages teams to craft their minimum viable product through an iterative “build-measure-learn” process (Reis, 2011). This approach asserts that chances for entrepreneurial success increase if teams engage in validated learning; if company strategy and product features are defined based on purposeful experiments with (prospective) customers (Murray & Tripsas, 2004). The approach also recognizes that many ventures will need to pivot to succeed; to “keep one foot rooted in what [they’ve] learned so far, while making a fundamental change in strategy in order to seek greater validated learning” (Reis, 2011, p. 154).

In the Kick-off meeting H. Ge spoke first. He along with fellow team members founded a venture that improves the safety and energy density of rechargeable batteries. Ge, who has a BS from MIT and a PhD from Harvard, is a co-inventor of the patented technology at the heart of the venture that won a previous year’s grand prize and Audience Choice award. Ge had the attention of this year’s contestants: he has been in their position, won the contest, and continues to build a growing company. His main message focused on the value that teams can get from participating in this contest and especially from engaging with their mentors (who are, in many cases, MIT alumni). The advice, the introductions, and the camaraderie that had been extended to him during the contest, he said, were instrumental to his team’s success in the contest and beyond. To learn as much as they can from the experience of being in the contest and being part of this community was his recommendation.

Following Ge was D. Brady. She and her sister, an MIT PhD student, co-founded a venture focused on making community-based disaster response smarter through software. Brady’s talk echoed and expanded on the themes presented by Ge. It also added a new dimension to the discourse: her venture did not win any award in



the contest, but it succeeded in the marketplace anyway. Her story demonstrated how the experience of participating in the contest – of belonging to the community and receiving the guidance – gave her team what it needed to secure funding, grow its customer base, and eventually ascend.

Before the first phase of the event ended, I also was introduced and permitted to explain my work for a few minutes. Then the event moved into its second phase: teams dispersed into other rooms to meet privately with their newly-assigned mentors. I spoke briefly with a few teams in the hallway as people were changing locations. But the Mentorship Kick-off Meeting from my perspective had come to an end.

At the start of the Kick-off meeting I had expected that the agenda would emphasize the requirements of contest participation and the mentorship process, and it did. But the meeting did more than orient people to the contest's rules and regulations; it connected ideas about how to participate in the contest with ideas about the meaning of participation. Through the content of speakers' stories and through the presence of the alumni mentors and the guest speakers, the meeting modeled for the contestants what it means to be an entrepreneur. More specifically, it modeled what it means to be an entrepreneur in this community famous for high-tech, high-growth entrepreneurial success. The event was an orientation not only to the contest but also to the role of an entrepreneur affiliated with this contest.

Existing research on entrepreneurship suggests that an entrepreneurial identity is formed through social and contextual processes often experienced through the act of new venture creation (Rae, 2006). Fletcher and Watson build on this idea and suggest that entrepreneurs understand their identity in a manner that includes links to "past (and future) conversations, events, experience, thoughts, ideas, etc." (Fletcher & Watson, 2007, p. 13). In other words, entrepreneurs become who they "are (however ephemeral, multiple, and changing) by being located or locating [themselves] (usually unconsciously) in social narratives" (Somers, 1994, p. 606).

The semi-finalists in the Accelerate Contest are actively creating new ventures – often a first venture but not always. Regardless of their previous entrepreneurial efforts, they are committed to the act of venture formation as individuals, teams, and as a cohort of semi-finalists during the Kick-off meeting. As such they could be seen as actively developing their entrepreneurial identities and adapting their self-concepts and (individual and collective) behaviors according to the social narratives – as expressed in word and deed – that they are encountering.

Both presenters spoke of their experiences during the contest and after it. However, only a small portion of their presentation time focused on tasks or accomplishments – and no time was spent on tales of nimble adaptations or high-stakes challenges. Most of their presentation time was devoted to the benefits that can come from participation in the contest and in the university community. While Brady did mention that her team had used the contest to develop some of their basic business skills, both of the narrative accounts were less about the mechanics of building a new venture and more about the relationships and responsibilities that accompany membership in this community. They were reflections on the meaning that contest participation had had for them and their ventures.

If stories can be shown as well as said, the attendance of the mentors and speakers signaled to the contestants that members of this community continue to engage after the contest and after graduation. A message possibly conveyed by the presence of these supportive people is that alumni (of the contest and the university) contribute to the ongoing success of the Institute's programs; that they empower the next generation's entrepreneurial ambitions. The future participation of each of the current contestants is welcomed and is, at some level, expected. Membership in this community means participating in its tradition of giving back. In other words, while the current contestants may be developing their role identity as individual entrepreneurs they also may be cultivating their identity related to membership in the contest's bounded social group (T. Owens, Robinson, & Smith-Lovin, 2010).

The positive view of older – albeit only slightly older in some cases – members in this community is a departure from some research which finds a divide between

older, more experienced individuals and “young guns” who may see themselves as more entrepreneurial than previous generations (Down & Reveley, 2004). The role of the alumni in the Kick-off event suggests a continuity of entrepreneurial practice, and an appreciation, if not admiration, for the entrepreneurial character and performance of predecessors. The alumni are positioned as role models for the current contestants to observe as they try on provisional identities as entrepreneurs (Ibarra, 1999). However, because the speakers at the Kick-off event were nearly peers to the contestants— removed from the contest by only a few year’s experience and still very early in the development of their ventures – perhaps they were easy for contestants to relate to as they articulate goals (Handley, Sturdy, Fincham, & Clark, 2006; Ibarra, 1999; Mead, 1934) and see new venture creation as an imaginable and desirable activity for themselves (Shapero, 1982).

The two guest speakers are the living history of the Accelerate Contest. Their stories from last year link the current contestants to the unfolding legacy of the contest. By relating to the narratives of the recent past the current contestants can better imagine their futures. The event expanded the contestants’ understanding of their role to include not only that of entrepreneur but as current and future contributor to the continuing history of the contest.

### **Private Reflections, National Concerns: The Finale, Demo Show, and Awards Ceremony**

My emailed notice about the Finale arrived on February 15<sup>th</sup> (italics and bold fonts as found in the original) (Contest Organizers, personal communication, 2013):

Come meet the MIT \$100K *Accelerate* finalists on **Tuesday, February 19th, from 6-9 PM** in Morss Hall to see who is going to win the Daniel M. Lewin Grand Prize! (No tickets required.)

The finalists vying for this prize are:

Web/IT Track Winner: Tree.st

Mobile Track Winner: Censio

Energy Track Winner: Bit Harmonics

Life Sciences Track Winner: Benevolent Technologies for  
Health

Products & Services Track Winner: Reticue

Emerging Markets Track Winner: Autosystems

Wild Card Round Winner: GutenTech

Wild Card Round Winner: QuikCatheter

In talking to the judges, they mentioned how talented and accomplished the teams are and how much progress they have made. This was not an easy decision for them to make. You can meet all of the semifinalists and see their demos during the Demo Show from 6-7 PM.

The Demo Show will end at 7 PM sharp, just before the keynote by Craig Newmark, Founder of Craigslist.

Ready, set, **Accelerate!**

- MIT \$100K Organizers

Morss Hall – otherwise known as Building 50 and the Walker Memorial – has been the location for most if not all of the \$100K awards ceremonies over the years. On the evening of February 19<sup>th</sup>, I and hundreds of others entered the Grand Ballroom at 6 PM to see this year's Accelerate Demo Show and Finale. Among those attending were many \$100K contestants from previous years and one of the founders of the original \$10K competition. Banners for the Accelerate Contest (depicting the race car driver) and for the \$100K Competition were hung from the 2<sup>nd</sup> floor on either side of the stage which was flanked by two large screens. Other than the banners, the only other decorations for the event were strings of checkered triangular racing pennants hung along the perimeter of the Ballroom.

Under the pennants, the semi-finalist teams were waiting to demonstrate their minimum viable products. The teams had been assigned tables and were ready to talk about their prototypes. I went from table to table listening, watching, and sometimes touching the prototypes. As the hour for the Demo Show grew to a close, I took my seat near the center of the room and waited for the formal Finale to begin.

Plate 4.5: Accelerate Contest Finale at Morss Hall



Source: MIT \$100K

After some brief welcoming statements, the organizers introduced the first speaker, Craig Newmark. As the founder of Craigslist, Newmark and his company have no formal ties to MIT. However, he is a well-respected figure in the entrepreneurial community throughout the US. Credited with revolutionizing the newspaper industry by his company's disruptive use of technology in the 1990s, Newmark has always maintained that his job was then and is now "customer service." Newmark spoke about the simple beginnings of Craigslist as a "hobby"; he had no ambitions of changing an industry. He also shared his reflections on two critical moments: realizing that he was not the best person for the CEO role and selling a stake in the company to Ebay (and not to other suitors that might have offered more dollars per share.) The decisions, he said, emerged from his sense of purpose about his work: "I was doing what felt right as a nerd." He also spoke about his latest entrepreneurial endeavor, Craigconnects – a venture devoted to the use of internet technologies in the civic realm. Now in its second year, Craigconnects is intensifying its focus on the needs of US veterans and military families.

After Newmark's keynote, the event's focus shifted to the finalist team pitches. The eight judges, who were seated in the first row, were introduced and the judging criteria were made visible on the large screen. The metrics for success included:

- Business Case and Product Application: What problem does the product solve?
- Opportunity Size: How big is the opportunity? Are there other applications?
- Technical Feasibility: Can the innovation be further developed?
- Execution: Did the team execute on stated goals? If not, what did they discover over the contest period, and how did they pivot?
- Team Expertise: Does the team have the ability to further develop the product and business?
- Competitive Position: Who is the competition and how does this team and product compare?

Each team was given seven minutes to pitch their venture and innovation followed by two minutes of questions by the judges. One by one the eight teams took the stage. One team experienced a problem with their demo, but otherwise all teams appeared to meet their presentation goals. Some of the lighter moments of the evening came during the question-and-answer period for the Glutentech team. Twice the audience erupted into supportive reactions (warm laughter and cheers). In the first instance, the technical team member answered a question with revealing detail about the team's uncertainty only to have his response restated by his team mate: "That's the technical answer. The marketing response is that we're looking into it." Seconds later, when a judge suggested that the team might not need the funding indicated in its estimates, the marketing team member responded, "How much would you like to give us?" just before the clock ran out.

In between the team presentations the organizers thanked the sponsors of the contest. After the last team had presented, the organizers welcomed another guest speaker, Paul Sagan, to the stage.

Sagan is the executive vice-chairman of Akamai Technologies and served as a judge for this year's contest. The topic for his presentation at the Finale was the commemorative naming of the Accelerate Contest's grand prize. The \$10,000 award was named after Daniel M. Lewin, an MIT alumnus and co-founder of Aka-

mai. Sagan spoke in detail about Akamai's founding story – the original team with its pioneering internet infrastructure technology had been a contestant in the 1998 \$50K competition. Only a year later, Akamai achieved one of the best IPOs in the history of the competition teams at that time.

Sagan also shared stories about Lewin who had been a passenger aboard a plane that flew into the World Trade Towers on September 11, 2001. Records from the final minutes of the flight have suggested that Lewin was probably the first person to die in that day's events. Seated in first class next to and in front of passengers who have come to be known hijackers, Lewin attempted to restrain his seat-mate and was stabbed and killed in the process. Sagan spoke about Lewin's character and offered advice for the contestants: "You can't be afraid to be bold, to be audacious and to tackle big problems, because in solving those big problems you find the biggest rewards. The rewards aren't just financial. The rewards are deeply satisfying in other ways, like leaving a mark on the world. That's how Danny did it."

Following Sagan's presentation the judges recessed to do their work, and the audience began texting their votes for the Audience Choice award. Minutes later all of the decisions had been cast.

The contest organizers announced the two teams that had one \$2,000 prizes first. The teams each went to the stage to the stage to receive an oversized check and pose for photos with the organizers. Finally, the winner of the Daniel M. Lewin grand prize was named. The Benevolent Technologies for Health (BETH) Project had won.

Plate 4.6: Table at the Demo Show



Source: MIT \$100K

The BETH Project's minimum viable product is a prosthetic socket. It is made from new materials that enable an amputee to fit the socket to the changing contours of his/her body. The new materials create a better and more comfortable fit for the amputee; the unlimited self-controlled adjustments of the socket prevent sores and support better mobility. Current socket technology requires multiple appointments with a prosthetic practitioner to fit the device to the amputee. However, once that fit is achieved, it doesn't accommodate the normal changes to shape and size that human bodies undergo. The BETH Project's product uniquely offers an improved fit and a streamlined process to attain that fit.

In their pitch, the BETH Project team emphasized the materials science advances behind their patent-pending product and hit the main points of interest to the judges. In terms of opportunity size, the team explained that a huge global population had no current access to affordable prosthetic devices, and even within the US the demand for prosthetic limbs was large and growing in two market segments: diabetes-related amputees and injured veterans returning from Iraq and Afghanistan.

While the BETH Project's pitch was about a possible future for their venture, the guest speakers' presentations were largely about the past. Their presentations, which occupied most of the time that evening, focused on history at various levels including stories of the individual, the \$100K contest, and the nation. Of course, the main purpose of the Finale event was to celebrate the progress of participating teams and to select the winning team(s) from the finalists. In this task, the event was clearly successful. But the event accomplished more than that; the Finale contrasted ideas about the milestones of new venture success with concepts about what it means to succeed as an entrepreneurial leader. Moreover, if the Kick-off meeting had helped contestants forge their identities on an individual and contest-cohort level, the Finale expanded those identities to include an identity – with some counter-intuitive facets – as emerging leaders who have the capacity to contribute at a national, even historic, level.

Unlike the speakers at the Kick-off, Newmark and Lewin (as represented by Sagan) were considerably more mature than the contestants and significantly more



accomplished – both have achieved widespread recognition as leaders from their industries and the broader culture. If they were presented as role models from a shared demographic group (Edelman et al., 2010; M. H. Morris, Miyasaki, Watters, & Coombes, 2006) – in this case, as “nerds” instead of classic categories such as gender or race – then their stories might suggest a credible future to contestants as entrepreneurial leaders with the capacity to impact the greater society.

The fact that speakers at a Finale event for an entrepreneurship contest had something to say about large-scale success may not be surprising at first glance – the entrepreneurship literature is rich with research on hero mythology (Carr & Beaver, 2002; Down & Warren, 2008; Ogbor, 2000). However, the messages offered by Newmark and about Lewin veered from the behaviors and beliefs often associated with a stereotypical (or archetypical) hero’s tale.

Newmark actively cast himself as an anti-hero in his presentation (and in his career). The story of a self-described “accidental entrepreneur” who yielded power and forsook dollars per share is not the standard hero’s journey. His story is not swashbuckling; it is humble. Yet Newmark is presented to the contestants (and seemingly received by them) as a model of a highly-successful entrepreneurial leader. The account of Lewin’s story might initially seem like an account of heroic action – and in the final minutes of his life he was, no doubt, courageous. But Sagan’s advice to the contestants is not to encourage them to be “bold” for the sake of being outrageous (Anderson & Warren, 2011); it is to inspire them to devote themselves to the “hard problems” that they, as admitted students at top engineering university, may have the technological capacity to solve. Together Newmark’s and Lewin’s stories do little to support the entrepreneur-as-hero caricature. Instead their stories suggest to these aspiring entrepreneurs that the quiet and concentrated application of their abilities to issues of national consequence is admirable in this community. They remind contestants that they have no need to exaggerate their abilities to garner attention; members of the MIT community – people like them – have used their technical aptitude to do great things and gain genuine recognition as leaders. The narratives give contestants a potential future that is

bigger than their personal sphere of influence – a possible role of national importance – without becoming inauthentic or grandiose.

The stories also were surprising because they did not emphasize technology, innovation, or the market impact technological innovation can create. Of course, Newmark and Lewin did change their industries and grow substantial ventures based on their innovations. But the limited presence of these topics in their presentations suggested that this community believes – perhaps expects that – its members have the ability to create breakthrough technologies and deliver market-leading products. What must be cultivated is how to conduct oneself and one's venture while building next-generation technological products.

In a different context, the speakers might have told standard success stories – tales of their ventures recounted in a way that makes their journeys sound inevitable or their contributions extraordinary. However, the speakers avoided this well-worn genre, and instead shared learning moments from their experiences. Both Newmark and Sagan on behalf of Lewin offered reflections on critical moments that they have faced as entrepreneurs in a way that attempted to give insight into their sensemaking as the events were unfolding. Of course, the speakers are sharing their recollections of sensemaking years after the fact – and consequently may be able to give only espoused theory despite their efforts to expose their theory-in-use at the time. Nevertheless, by striving to reveal their situated understanding of some critical moments in their entrepreneurial careers the speakers demonstrated the importance of maintaining a high-level of self-awareness and a willingness to question yourself and the assumptions that you might hold.

Echoes of both Newmark's and Lewin's stories could be found in the BETH Project's development. The winning team chose to focus on an unglamorous but challenging problem in materials science and ended up poised to contribute to a significant issue on the mind of the nation. Their venture's future in serving the needs of injured veterans resonates with Newmark's focus for Craigconnects and is related to Lewin's final moments in 2001 and the military conflicts that have followed. Their venture's selection as the grand prize winner underscores the importance of inno-

vative entrepreneurship to national concerns and this community's ongoing history of contributions through innovative entrepreneurship for the wider society.

### **The Hidden Curriculum of Innovative Entrepreneurship: The Accelerate Contest and Entrepreneurial Education**

The Accelerate Contest exists to support students who aspire to become successful entrepreneurs. With its lean startup orientation (Reis, 2011), the contest encourages the iterative learning that often accompanies the development of successful innovative entrepreneurial ventures. The interactions with assigned mentors and expected meetings with (prospective) customers are meant to help contestants vet their products and pivot, if necessary to better offerings. In these ways, the contest requires contestants to analyze and interpret real market data with the intent of building a minimum viable product. This experiential learning task may be the foremost educational goal of the contest.

Because the contest occurs within a university setting that offers formal and informal coursework in entrepreneurial topics, it is free to focus on this subset of entrepreneurial development. Students who need to learn the mechanics of new venture formation or seek to understand theory can enroll in core and supplemental courses at MIT in Finance, Law, Leadership, Marketing and Planning, Operations, and Strategy for credit or enrichment. As Honig states, coursework, "is frequently in contrast to the needs of entrepreneurial education. Knowledge and skills presented with traditional methods often fail to transfer to the actual environment where they might be utilized" (Honig, 2004). The Accelerate Contest as part of the \$100K Competition contextualizes the coursework and gives aspiring entrepreneurs the experience of enacting an entrepreneurial endeavor within the scaffolding of the university.

Even though the main learning goals of the Contest might be met in experiences beyond the documented cases, the two studied events were not without educational content. The events exposed contestants to narratives that modeled how to

be (and become) an entrepreneur: how you might enact an entrepreneurial journey; how you might participate as an alumnus/alumna; and how you might contribute to the wider society by applying your aptitude to worthy challenges. These events showcased in narrative form the behaviors of successful entrepreneurs as defined by this community.

The Kick-off event emphasized how to participate in this contest and community. The literal message was to leverage the contest's opportunity to learn from the mentors, but the medium was also the message: individually you can succeed by tapping into this community's brain trust, and collectively the group can build a continuing legacy of success by freely sharing their expertise with this community over time. Despite the association of independence and autonomy with entrepreneurship in academic (Lumpkin & Dess, 1996; D. Sexton & Bowman, 1986) and popular circles, this event signaled the extraordinary value to be found in solidarity.

The speakers in the Kick-off event also modeled the ability to acknowledge their learning and express gratitude for the contributions of others, and the Finale event expanded on those themes of situated humility (Barton & Sutcliffe, 2010). The Finale's speakers shared stories of considered entrepreneurial action – having an awareness of self-limits, maintaining a focus big problems (not big pay-offs), and questioning assumptions and interpretations in the moment as entrepreneurial challenges emerge. These sensemaking maneuvers, often associated with successful teams in other dynamic, high-stakes contexts (Edmondson, 2003; Weick, 1993), seemed to be essential to the success of these celebrated entrepreneurial leaders. And while ambition and boldness might be associated with the entrepreneurial character (Anderson & Warren, 2011; Nicholson & Anderson, 2005), these high-tech, high-growth, for-profit founders were underscoring the importance of service – to customers as a part of the founder's day-job and to worthy causes as a compass for the founder's career.

Together, these events and the narratives presented within them also provided contestants with positive suggestions about the value of reflective practice. There is no “crisis of confidence in professional knowledge” (Schön, 1983, p. 3) here. The

integration of know-how from practitioner experience in combination with (formal and informal) learning is accepted as the preferred way to grow – to develop skills as a founder and to adapt the offering(s) of a venture. The speakers talked about their experiences, of course, but perhaps more importantly they talked about the meaning of key moments as they were understood at the time. This is the essence of reflective practice – pausing at critical instances to sensemake about the situation and your interpretation of it as it is unfolding. I would also posit that reflective practice might also underlie the lean startup approach to developing a minimum viable project. Deciding to pivot or persevere is a critical moment in the life of an entrepreneurial team; in between the stages of building product and measuring results of market experiments must be reflective dialogue about the data and the implications that it holds for the product or strategy.

Not everyone is empowered to share detailed reflections in every context, however. This hidden curriculum of innovative entrepreneurship was made most evident in the team pitches during the Finale. In formal learning settings it is probably easy for the student contestants to recognize the repertoires of classroom discourse (Cazden, 1988):

- Instructors tend to wield the language of social experience and control; the social function of discourse that focuses attention and structures the general experience;
- They also tend to advance the language of content and the curriculum; the propositional function of discourse (sometimes referred to as the referential, cognitive, or ideational function) that names and defines the material to be learned;
- Students can be invited to participate in the language of personal identity; the expressive function of discourse that gives voice to the speaker's attitudes and private experiences at specified times, but often this function is reserved for guest lecturers.

Even though the Finale is not a formal classroom, it is a learning event, and it did seem to leverage classroom rules of discourse. In the Finale event, the contest organizers held the language of control; they uniquely were signaling the beginnings and endings of portions of the event and guiding the attention of the teams, judges, and audience members. To a certain extent, the judges also were permitted to exercise this function of discourse by asking questions of the teams. However, the judges' questions were primarily revealing the language of the curriculum. By asking about the market opportunity, the financial expectations, or other criteria of interest, they effectively were quizzing the teams about their competence in these subjects. The guest speakers demonstrated the language of personal identity. Their status as visiting experts afforded them the use of the expressive function of discourse, and they shared generously about their personal experiences and beliefs.

The teams, however, seem to have been expected to operate within the student register of classroom discourse. Unless instructed to do otherwise, high-performing students in classroom settings tend to adhere to a language of response. Sharing time for young students or discussion periods for older students are defined by an instructor's language of control, and students participate in these expressive or exploratory interactions when they are allowed to do so. Otherwise, students in a classroom might expect to be called on to answer questions or present work that can demonstrate competence.

The actions of Glutentech came across as charming and deserving of supportive audience reactions because they – unknowingly and then perhaps knowingly – broke the rules of discourse. When the technical team member shared too much he was enacting the language of expression that was not permissible in that context for a contestant. Conversely when his marketing team mate stepped in to succinctly reposition the team's response, she was demonstrating the communicative competence expected in that moment (and possibly in other entrepreneurial fundraising scenarios). This was possibly a moment of team learning in action; an example of the zone of proximal development (Vygotsky, 1998). And when she made

use of the final second of her team's question-and-answer time to respond to the judge with a question of her own she was asserting a language of control and again demonstrating her awareness of the discourse rules (in this case by appearing to knowingly and playfully break them.)

### **Looking Back to Forge Ahead: The Twin Forces of Inheritance and Innovation in Entrepreneurial Education and Practice**

Through my observations of the Kick-off and Finale events of the MIT Accelerate Contest I was struck mostly by the animating role of history. Historical accounts in a variety of dimensions – from the very recent or distant past, or from personal, institutional, or national experiences – are a primary means of transmitting or modeling entrepreneurial attitudes and behaviors. The personal histories of select founders, the contest history at the university, and the nation's history as related to entrepreneurial purpose all signal something about the innovative entrepreneurial process to contestants.

The contest exists to support the learning of current contestants, and stimulate the creation of new ventures. The events contributed to these goals. However, the structure and content of the events also suggest that they might serve an additional purpose: to develop an enduring and evolving community of people who can contribute to the future of the university's entrepreneurial impact.

The narratives of the personal history and contest history in the Kick-off event seemed to serve primarily as a means to transmit knowledge about the value of relationships to early-stage entrepreneurs and the norms of the community. Similarly, the presence and active participation of alumni as mentors for the contestants could be understood as a message about opportunities for (and expectations of) future involvement in the community's practice. To attend the event was to be exposed to insights about and models of entrepreneurial identity on a personal and group level.

The narratives shared in the Finale event, too, seemed to impart insights about establishing an entrepreneurial stance. Competence is valued more than celebrity in this community, and significant success can come from grappling with big problems sans big egos. The speakers' stories separated entrepreneurial myth from entrepreneurial mastery and may have provided contestants with models of entrepreneurial identity and leadership associated with large-scale impact and nationally-recognized success.

While it might be true that the events were more about learning how to *be* an entrepreneur than they were about how to *do* entrepreneurship, lessons about entrepreneurial practice could be found in the events as well. In the Finale, each team's communicative competence, including their understanding of possible rules of discourse, was exercised and tested during the pitches. In fact, a zone of proximal development for one team was revealed. This encapsulation of learning-in-action also suggests that peer-to-peer experiential learning happened within the events in addition to the expert-to-novice transmission of information and ideals.

Lastly, the events showcased the importance of reflective practice to the success of new venture creation and entrepreneurial leadership. Each of the speakers referenced the meaning-making that they did in the moment as their ventures were ascending. Their efforts to share their theories-in-use at critical moments – even if distorted by the months or years that have passed – could be recognized as a description of a practice that contributed to their success. Perhaps the importance of reflection to the entrepreneurial process – especially to the refinement of a minimum viable product – could be considered a seminal learning goal for the Accelerate Contest participants. The narratives in the events combined with their lived-experience of iterative learning during the contest might enable contestants to better identify pivot points, make sense of the market data, and refine their products and strategies appropriately.

An appreciation of history in the innovation process is the force that seemed to unite the various learning goals that surfaced in my experience of the events surrounding the MIT Accelerate Contest. I have attempted to describe these two case



studies and convey the relationships between past and future – between history and innovation – that emerged in this contest for entrepreneurial learning. I have tried to analyze and explain how that conceptual proximity between past and future contributes to the process of becoming a high-growth, high-tech entrepreneur by:

- Examining the anchoring value of alumni narratives to inspire and inform contestants about the contest and early-stage entrepreneurial practice;
- Noting the use of alumni involvement to model norms of behavior in this community, including the significance of national, historical events to the identity and endeavors of aspiring entrepreneurs;
- Identifying some rules of discourse in evaluative settings with potential funders;
- Considering the role of reflection in the lean startup practices of entrepreneurial experimentation and iterative learning.

That final point about the role of reflective practice in the daily work of entrepreneurial teams is significant. Reflective dialogue and other conversational forms used by entrepreneurs at work can be examined through the micro-analysis of intra-team conversations. While this doctoral research project is not searching explicitly for reflective dialogue, it is probing the detailed language use of innovative entrepreneurial teams engaged in the process of crafting minimum viable products. The following chapters report the results from this inductive inquiry into the conversational patterns of entrepreneurial innovation teams in action.

## **CHAPTER FIVE: OBSERVATIONS FROM AN INDUCTIVE INQUIRY INTO THE VERBAL SENSEMAKING PATTERNS OF INNOVATIVE ENTREPRENEURIAL TEAMS IN CONTEXT**

Some research has linked early-stage entrepreneurs with sensemaking behaviors, but little is known about the sensemaking behaviors used by entrepreneurial teams as they enact their work. This study aims to identify the verbal sensemaking behaviors of entrepreneurial innovation teams in action. It has attempted to do so by analyzing naturally-occurring conversations of early-stage entrepreneurial teams while they are grappling with uncertainties arising within their specific circumstances. It also has sought to identify sensemaking language forms – in the Aggregate categories of Information, Meaning, and Action – and patterns associated with different types of uncertainty and various levels of team performance. Three orienting questions were constructed to explore these objectives, and this chapter reports the findings from the first: What verbal sensemaking patterns can be observed within team conversations across the arc of a lean startup entrepreneurship competition?

Data relevant to the first Research Question suggest that these teams are sensemaking. They devote a large number of utterances to issues of Alignment; utterances that acknowledge, confirm, and agree or disagree with the previous speaker's contribution. The teams also utilize more utterances coded for Meaning than Information or Action as they navigate the uncertainties of their situations.

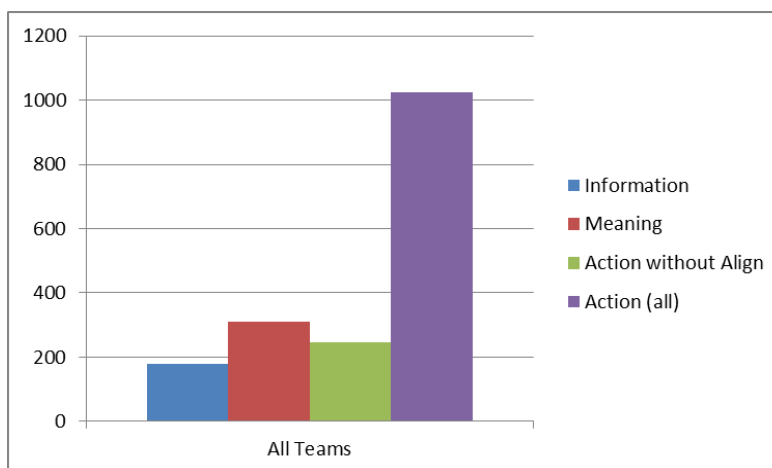
These and other verbal sensemaking behaviors demonstrated by the teams in this study will be explored in detail in this chapter. A combination of descriptive statistics, journalistic samples, and coding charts will be used to illuminate the results.

### **Finding One: These Entrepreneurial Teams are Sensemaking**

To answer the question about establishing a baseline pattern for entrepreneurial teams' sensemaking language, the total number of utterances associated with the

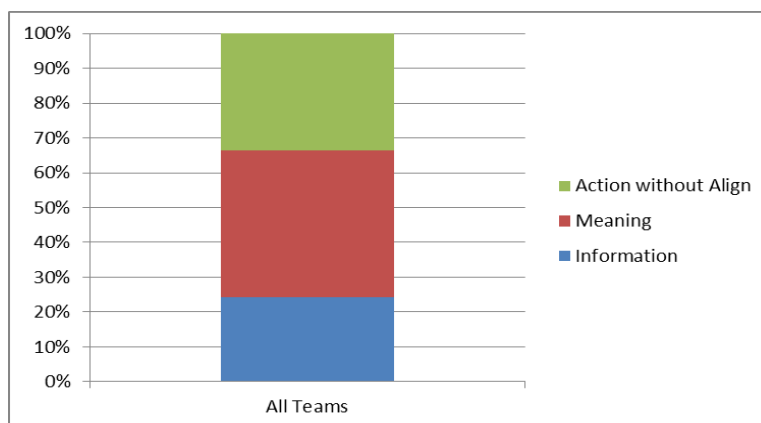
Aggregate codes (Information, Meaning, and Action) from both teams was tabulated. (See Figures 5.1 and 5.2.)

Figure 5.1. Total Information, Meaning, and Action Utterances for All Teams Combined



Source: Author

Figure 5.2. Distribution of Information, Meaning, and Action Utterances for Both Teams Combined



Source: Author

The Aggregate Category of Action has by far the most utterances ( $n=1,025$ ) associated with it when the Align Primary Code is included. When the Align Primary Code is set aside, the Aggregate Category of Meaning has the most utterances ( $n=310$ ), followed by Action (without Align) ( $n=246$ ), and Information ( $n=179$ ). The

distribution of utterances is approximately 24% Information, 42% Meaning, and 33% Action. The Align Primary Code by itself has more utterances associated with it (n=705) than any of the individual Aggregate Codes.

### Result 1: Alignment is an action unto itself

The Primary code Action: Align has within it sub-forms that include Acknowledgement, Agree/Confirm, and Disagree/Contrast. Separating utterances coded for Acknowledgement from those coded for Agree/Confirm required repeated listening to the recorded data; the second coder who performed the reliability work also struggled to confidently distinguish the two forms in some cases. However, all three of these sub-forms belong to a set of Action moves that indicate intra-team alignment of some kind.

Utterances coded for Align: Acknowledge often are spoken over another team member's contribution to signal basic comprehension, attention, and presence. For example, the Green Team had the following exchange about Abram's experience using the team's software product with his nieces:

*As part of the Green Team's approach to gathering customer data, Abram spent a day with his nieces. Clearly pleased with and excited by the experience he had with them, Abram shares details from the experience with his team. He at one point tells the team, "Like, you know, it's almost like, you know, I can imagine a commercial...". Yoichi chimes in with, "Yeah," to acknowledge the idea and sentiment that Abram is expressing. Abram expands upon his vision for this imagined commercial, "... you know; where it's like, you know, that special time...". Yoichi indicates that he has followed and understood Abram's imagined commercial by offering a supportive, "mm," and Carrie overlaps Yoichi with her own offering of comprehension, "Yeah."*

The utterances of “yeah” in this sample exchange are signaling that the team members are listening and following the points being made by the speaker. Utterances associated with Action: Align: Agree/Confirm also can be the single word “yeah,” but the work they do in the conversation is different. Because statements that signal Action: Align: Agree/Confirm may express a more developed thought they may also have a richer construction. For example, in a moment when the Yellow Team is discussing the contest they wonder about how many business cards they might need to have with them at the Finale event. When Seth asks, “Who’s gonna ask for our card?” he is suggesting that the team probably needs only a few business cards. Shahrnaz signals her agreement with his point by saying, “You’re right.”

Disagreement can take a variety of forms. Sometimes a simple no will suffice, but sometimes more complex utterances are needed. Disagreement can be expressed in a gentle face-saving manner or with a more direct approach as the following two examples from the Green Team demonstrate.

*Early in the contest experience, the Green Team is considering how to optimize their product development efforts during the weeks of the contest. Abram is advocating that they spend their time and resources to make “contact with publishers, editors, and authors” because, “like a lot of [the product] is not gonna change much.” Carrie has an immediate reaction: “Mmm,” she swiftly hums in a tone that goes from low to high. “I I thi,” she says and then chooses another way to begin. “I agree that could be the case but I think that it would be a good test because we’re so so for example like our pricing strategy...” “Yeah,” interjects Abram while Carrie continues: “like we did a basic assumption. We haven’t tested that with a single customer. So it’ll be a very important process to like go back and look at all of that. I think you’re right the infrastructure is there and we’ve thought through every like major piece...” Again, Abram adds a “yeah” to the interaction while Carrie speaks. She continues ex-*

*plaining her perspective and states, "...but I think that what would be very interesting is to validate..." Now Yoichi chimes in with his support for her views. "Right" he says while Carrie continues: "... like some of the assumptions that we've made like that..."*

Carrie has chosen her words of disagreement carefully as indicated by her instantaneous decision to reframe her statement and start her sentence a second time. However, not every exchange of disagreement takes that approach. For example, Vera in a later Episode takes a more confrontational approach to disagreeing with Abram:

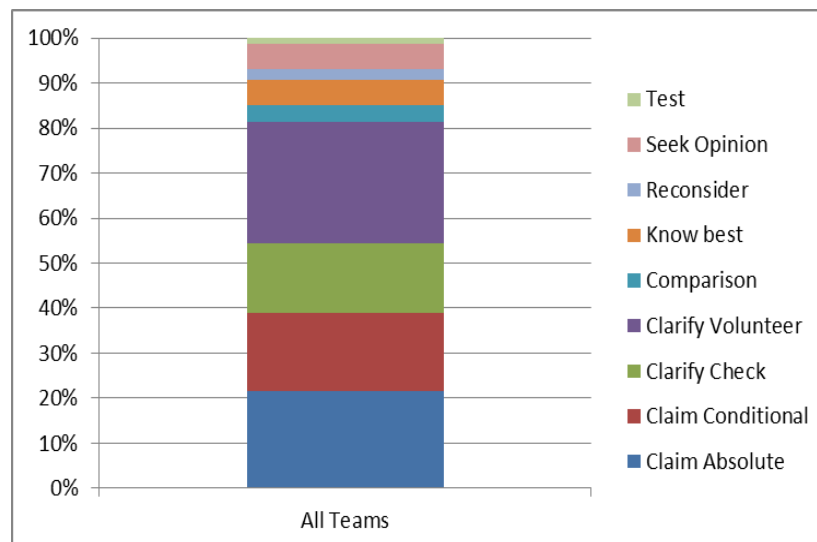
*Weeks into the Contest the Green Team is struggling. While they've gathered input from prospective customers they've not gotten the feedback that would validate market acceptance of their product as it is. Repeatedly they've run into the fact that the product requires a lot of technical expertise to use; it is still more raw technology than product. Abram is looking forward to a time in the near future when the venture is officially up and running and suggests that, "... one of the I think first things that we would also have to spend money on is like how the hell do we patent things." Vera responds: "That's one. And how the hell do we simplify the entire process of [product use]." Abram tosses out, "Yeah, yeah..." and then attempts to re-contextualize her disapproval by adding, "...but to me that's that's like we get to that in year two." Vera dryly replies with, "Year two." Abram says, "Yeah" and goes on to explain why changes to the product are enhancements that are not especially urgent.*

Through single words or complex sentences, and through indirect or direct expressions, the two teams studied in this project devoted most of their utterances to the various processes of team Alignment.

## Result 2: Meaning-making plays a large role in the act of negotiating uncertainty

As previously mentioned, the teams in this study contributed a higher number of utterances coded as Meaning than they did utterances coded as either Information or Action (without Align). Within the Aggregate of Meaning the most frequently used Primary Codes were Clarify (n=131) at 42.26% and Claim (n=121) at 39.03% which are comprised of four sub-forms: Clarify: Check, Clarify: Volunteer, Claim: Absolute, and Claim; Conditional. The usage of the sub-forms can be quantified as Clarify: Check (n=48), Clarify: Volunteer (n=83), Claim: Absolute (n=67), and Claim; Conditional (n=54) representing 15.48%, 26.77%, 21.61%, and 17.41% respectively of the whole. (See Figure 5.3.)

Figure 5.3. Meaning Utterances for Both Teams Combined



Source: Author

Meaning-oriented exchanges emerge at times when team members are striving to ensure understanding. The Green Team enacts this kind of verification process in the following excerpt from their conversations:

*Vera has suggested that the team consider the possibility of adding some engineering students to the project during the time between terms; if any of the students are really good the team could ask*

*them to join on a longer-term basis. Carrie checks her understanding of Vera's suggestion by asking: "I mean this as like just an open question: like do you have a little anxiety about [the product] not being ready like uh, or do you feel like this is just a timely opportunity we should take advantage of?" Vera tells her, "A little bit of both" to which Carrie replies, "Ok." Vera continues to explain her perspective by adding, "Also because when they – when the when one of the judges – asked us that question..." And as Abram says, "yeah," to acknowledge her recollection of that situation, Vera shifts the focus of her explanation from Carrie to Abram. Vera continues to describe the reasons that animated her interest in adding engineering talent to their team by saying, "The fact that all the functionalities that you are talking about are they, which stage are they in, and we said we are in the pre-alpha stage..." Abram again contributes a "yeah" to the dialogue. And Vera adds, "Uh, I think those questions will come from the VCs as well."*

Various forms of meaning-making are at work in this short sample. Carrie initiates the exchange by requesting clarification, specifically with an utterance of Clarify: Check. Vera begins her reply with statements of Clarify: Volunteer which expand and explain her position more fully. She does so first in an explicit way to help Carrie understand; then she proactively volunteers an explanation to Abram in the event that he, too, might have missed the motivation for her recent suggestion about adding engineering talent. Vera then offers a statement of Claim: Conditional when she says that she believes that the same questions will come from the venture capitalists from whom the team wants to get funding.

Utterances coded for Claim happen with slightly less frequently than those coded for Clarify in the combined set of data gathered from these two teams. And Claim utterances of the Conditional kind – those which convey a flexible view of a situation rather than a fixed one – occur less frequently than Claims of the Absolute kind. But neither Claim type is as simple as it might seem. For example, Meaning:



Claim: Absolute can signal a fixed view about relentless change as this sample from the Yellow Team demonstrates:

*Seth has been joking about his role on the Yellow Team. He has said facetiously that he doesn't care if people like the product or not; that he only cares if it works. Shahrnaz has been laughing and acknowledging his playful attitude on the matter. Then Seth gets a bit more serious and makes an absolute assertion about the entrepreneurial situation that many call "Crossing the Chasm": "It's like: right now, it's like 95% that it works and 5% that people like it." Shahrnaz confirms his assessment by contributing a, "yeah," before Seth makes another claim with certainty by stating, "And then right when it works it completely switches!" Shahrnaz acknowledges his point of view with a "yeah" while he is speaking and confirms her agreement with him by adding, "It does" after he finishes.*

This example of Meaning: Claim: Absolute illustrates two points. The first, and possibly more expected, point is that Absolute framing is used by speakers to discuss matters that seem certain in their minds; to discuss circumstances that seem fixed to them. Seth, for example, is stating with certainty that the dynamics of *Crossing the Chasm* (Moore, 1991) exist; that a time will come making the product desirable will replace making the product work as their most important task. The second, and perhaps more subtle, point about Meaning: Claim: Absolute that emerges from this example is that even though the assertion is made with certainty, the topic of discussion can be steeped in uncertainty. In other words, Seth is stating with certainty that entrepreneurs such as themselves can neither control nor predict the market's interest, direction, and timing; he is proclaiming with certainty that everything is uncertain.

In another exchange the same team exercises an expression of conditionality in a Claim utterance:

*As Seth and Shahrnaz prepare for the demo show they consider the possibility of giving out food at their table. Shahrnaz seeks Seth's opinion on the matter by asking, "Does it seem a little too ktichy?" Seth responds with, "Maybe," and Shahrnaz accepts his reply with, "Yeah." Seth continues by claiming, "I think that's what I'm thinking..." about the situation. Again Shahrnaz agrees: "Yeah, it's like not a trade show." And Seth completes the exchange; offering his own agreement with her assessment by saying, "Yeah."*

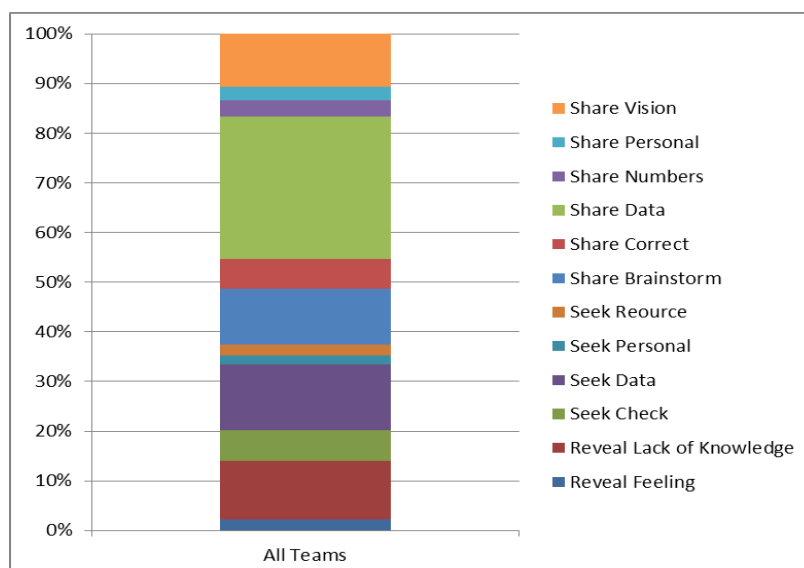
In this case, the Meaning: Claim: Conditional utterance, "I think that's what I'm thinking," reveals the flexible stance of the speaker; an ability to imagine their future table at the demo show in a variety of ways. This ability to keep options open while still making progress is a hallmark of Meaning: Claim: Conditional – whether or not the grammatical construction of the statement includes explicit discrepancy words such as could or if.

Again, the Meaning Aggregate was comprised mainly of utterances coded for Clarify and Claim. Whether verifying comprehension or volunteering explanations, or asserting fixed or flexible views about the topic, the language used by the teams studied in this project was focused on the dimensions of meaning-making best described as Clarify and Claim.

### Result 3: Share: Data dominates the Information Aggregate

Unpacking the Information Aggregate shows high percentages of utterances coded for Share: Data (n=51) at 28.49%, Reveal: Lack of Knowledge (n=21) at 11.73%, Seek: Data (n=24) at 13.40%, Share: Brainstorm (n=20) at 11.17%, and Share: Vision (n=19) at 10.61%. Lower percentages of utterances were coded for Seek: Check (n=11) at 6.14%, and Share: Correct (n=11) at 6.14%. And the percentages of utterances coded for Share: Numbers (n=6) at 3.35%, Share: Personal (n=5) at 2.73%, Reveal: Feelings (n=4) at 2.23%, Seek: Resource (n=4) at 2.23%, and Seek: Personal (n=3) 1.67% were lower still. (See Figure 5.4.)

Figure 5.4. Information Utterances for Both Teams Combined



Source: Author

The code of Information: Share: Data includes utterances that report experiences with advisors, teachers, prospective customers, and other people who are part of the entrepreneurial innovation ecosystem. When Information: Share: Data is brought into a conversation, the utterance can move the conversation in a variety of ways. According to this study, utterances coded for Information: Share: Data can be integrated into a productive plan for change or be redirected along other trajectories.

An excerpt from the Yellow Team demonstrates a possible way to integrate feedback from the ecosystem – in this case a teacher – into a plan to evolve the product.

*While the Yellow Team has been developing their minimum viable product Shahrnaz has been taking a class on entrepreneurship. In a previous conversation Seth has asked her to share what she is learning in the class. After showing Seth some of the recent class materials about the value of defining an end user profile she reports, “And then here’s some questions to think about: how’s the*

end user de... how the end users determine they need need this um or have an opportunity to do something different which are two different things.” While she’s speaking Seth acknowledges that he is listening and comprehending by offering, “Yeah,” and when she concludes he offers some agreement and support: “Yeah and that’s key. And that’s important for us...” Shahrnaz agrees with him as he asserts, “...because people need to realize that for not much money you can feel a lot better.” Shahrnaz says, “Right,” to express her agreement with his claim. Seth continues his thought, “Like that’s a big deal.” Shahrnaz shares more from the class materials: “How do they find out about your product? How do they analyze your product... How do they get support for your product? How do they buy more of your product? So really good, good questions to think through.” Seth picks up on her proposal to think more about these points. He echoes and extends it by adding, “All right um I think that’s a good thing for both of us to work on.” Shahrnaz agrees, and Seth explains himself more fully by adding, “I mean that’s mor much more up your alley...” Shahrnaz concurs with his assessment by saying, “Yeah, it is.” Seth then volunteers his solidarity by adding, “...but I think I can add perspective that’s very different than yours. It might be worthless since I don’t have [a personal need for the product] but...” Shahrnaz keeps him from excluding himself by interjecting, “No but I I woul I think this is definitely something I need to focus on. Just going through [the teacher’s] slides again and seeing what we can pull out.” Agreeing with this plan of action Seth adds, “No, um, I think that’s a great idea. Uh okay. So that’s an important one I think; the end user profile.” Shahrnaz agrees with, “Yeah,” and the conversation focuses on other collaborative tasks they can undertake to develop their product and venture.

In this exchange Seth and Shahnaz integrate data from the ecosystem into a specific next step that they can take. However, not all utterances coded for Information: Share: Data result in that kind of progress. In some cases utterances coded as Share: Data can be muted and the team's actions directed away from next steps that would incorporate the information from the ecosystem. This alternative processing of Share: Data seems to happen in the presence of Information: Share; Vision, Action: Influence, and Information: Share: Brainstorm.

For example, as earlier excerpts from the Green Team have indicated, the team has been told by prospective customers that their product's ease-of-use is important. Carrie is referencing that feedback in following exchange:

*Sharing her perspective about the information they've gathered from the ecosystem, Carrie says to Abram, "Where we're behind still is on the ease of use." Abram acknowledges her contribution to the conversation with an, "Uh-huh" while Carrie turns her attention to Vera and continues: "... and I think that is what you [Vera] are referring to but I have missed the front of it." Vera agrees with Carrie while she is finishing her sentence. At the instant that Carrie stops speaking Abram resists Carrie's critique: "But ease of use is just related to authoring." Carrie acknowledges this point. Abram then starts a thought, "I think..." to which Carrie responds in acknowledgement with, "Yeah." Then Abram starts again; this time by building some alignment, "And that I agree I totally agree." Carrie offers another "Yeah" of acknowledgement before Abram begins to contrast with Carrie's earlier perspective. As Abram starts to make his point by saying, "And so for so but..." Carrie again acknowledges his contribution with, "Yeah." At this point Abram begins to neutralize the customer concerns that they've heard by contributing a statement of resistance: "So we were talking about this the other day as... there's...". Carrie shows that she is following Abram's train*

*of thought by saying, “Yeah” while he speaks. Abram continues by making an absolute claim: “...this idea and I want – this needs to be in our heads....” Vera now acknowledges the direction of the conversation by repeating, “Heads.” Abram continues by referring to the theory and vision behind their venture, “...and in our thinking is participatory cultures.” Vera shows that she has heard him by making the “mmm” sound. Abram expands on his vision by attempting to defend the original theoretical position: “Okay? Or participatory communities. And ultimately that's what we're trying to – that's what I'm trying to create. That's what we're trying to create right?”*

The conversation then goes on to talk about examples of existing companies; companies that have not been contacted by any team member and are known by the team only through general advertising and other distant means. The conversation does not lead to a plan to resolve the issues about ease-of-use that Carrie raised. Nor does the conversation conclude with everyone explicitly agreeing to the no-action course of action that Abram's revival of the original vision is promoting. After statements of Action: Influence and Information: Share: Vision, the conversation disengages from the unresolved issue and moves to another topic.

Utterances coded Information: Share: Brainstorm also seem to have a similar impact on the trajectory of conversations related to data from the ecosystem. For example, a Green Team conversation that begins with Abram sharing information from a customer interview ends with a brainstorming session unrelated to the customer feedback or immediate next steps. Abram reports to his team that the customer wanted a product that was, “so easy that like [a five-year-old child] can almost do it by herself” and included “tutorials” on how to use it. Abram also reported on the matter of pricing; the customer had said “if it's good content and my child likes it I'd be willing to pay for it.” But instead of using this customer feedback as a springboard into a conversation about a plan of action to improve the ease-of-use or create tutorials for the minimum viable product, Abram focuses on the distant

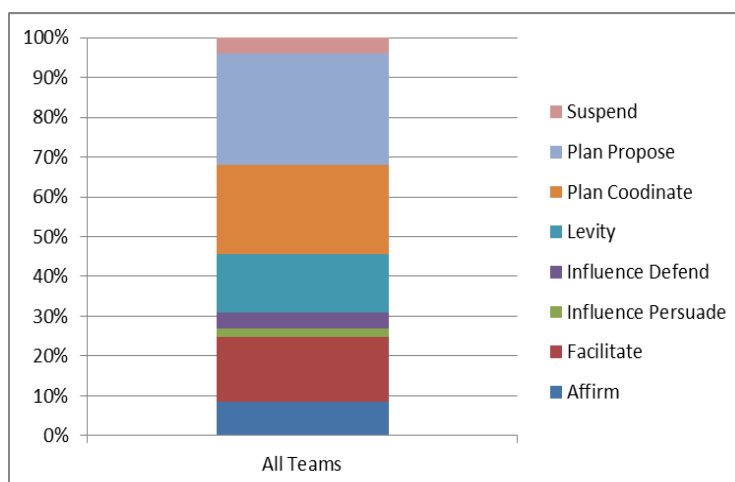
future. He brings up, “some stuff I would like to do in the future” such as integrating sensors that can bridge the “physical and digital divide” that currently separates physical toys from digital worlds of play.

Utterances coded for Information: Share: Data serve many purposes in the conversations of the studied teams. This sub-section has highlighted a few: utterances coded for Information: Share: Data can lead to the creation of an action plan based on the feedback from the ecosystem or they can be over-taken by themes that are disconnected from that feedback.

#### Result 4: Utterances coded for Plan dominate the Action Aggregate

An examination of the Action Aggregate shows that 50.40% of the utterances are coded for Plan (n=124). Utterances coded for Levity (n=36) and Facilitate (n=40) account for 14.36% and 16.26% respectively. Utterances coded for Affirm (n=21) account for 9.53% of the utterances. 6.09% of the utterances were coded for Influence (n=15), which consists of the sub-forms Influence: Persuade (n=5) and Influence: Defend (n=10). Utterances coded for Suspend (n=10) account for 4.06% of the whole. (See Figure 5.5.)

Figure 5.5. Total Action (without Align) Utterances for Both Teams Combined



Source: Author

Action: Plan is comprised of two sub-forms: Plan: Coordinate (n=55) which accounts for 22.35% of the whole and Plan: Propose (n=69) which accounts for 28.04% of the whole. The Coordinate sub-form is assigned to utterances that organize a team's actions in a general way whereas the Propose sub-form is assigned to utterances that make specific suggestions for the team's activities. Just as the Primary Code emerged from the consolidation of the sub-forms, these sub-forms were built upon many smaller proto-codes. Support, Help, and Suggest are a few of the many descriptive terms that were assigned to utterances during the open coding process; codes that eventually become part of the Coordinate and Propose sub-forms.

The spirit of Plan: Coordinate can be found in the following excerpt from a Yellow Team conversation about their participation in the Contest.

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Seth</i>	<i>What are our goals for the demo? I think there's 2 goals. Um. That I can think of; that we can strive for. One is impressing the judges. Maybe there's 3 goals: impressing the judges beforehand...</i>	<i>Action: Plan: Coordinate</i>
<i>Shahrnaz</i>	<i>Oooo</i>	<i>Action: Align: Agree/Confirm</i>
<i>Seth</i>	<i>Try and get them to like us</i>	<i>Action: Plan: Coordinate</i>
<i>Shahrnaz</i>	<i>Ok cause we'll have an opportunity to meet them,...</i>	<i>Meaning: Clarify: Check</i>
<i>Seth</i>	<i>I think they'll come all around</i>	<i>Meaning: Claim: Conditional</i>
<i>Shahrnaz</i>	<i>... right?</i>	<i>Meaning: Clarify: Check</i>
<i>Seth</i>	<i>Yeah</i>	<i>Action: Align: Acknowledge</i>
<i>Shahrnaz</i>	<i>Ok</i>	<i>Action: Align: Acknowledge</i>
<i>Seth</i>	<i>The other one is to impress as many people as we can beforehand.</i>	<i>Action: Plan: Coordinate</i>



As Seth opens the conversation he is organizing the team's approach to the contest by suggesting that they might have a set of three goals. He names the goals, but he doesn't specifically outline how to achieve those goals. Consequently his utterances are coded for Plan: Coordinate rather than Plan: Propose. The more specific type of Planning that is indicated by Plan: Propose can be found in a different Yellow Team conversation; this one about the Product:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Seth</i>	<i>I think that's probably more important You should do that first and then we revisit our numbers</i>	<i>Action: Suspend</i>
<i>Shahrnaz</i>	<i>Yes</i>	<i>Action: Align: Agree/Confirm</i>
<i>Seth</i>	<i>Yeah we should do that first</i>	<i>Action: Plan: Propose</i>
<i>Shahrnaz</i>	<i>Yeah</i>	<i>Action: Align: Agree/Confirm</i>

In this excerpt, Seth is directing the activities of the Yellow Team with specificity; an exact task and a clear ordering of tasks are expressed.

In both of the aforementioned conversations, the suggestions or instructions that were coded for Plan were directly stated. However, utterances coded for Plan can have an indirect construction as the following excerpt from the Green Team shows:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Carrie</i>	<i>uh I was taking a quick look at the slides. And then a couple logistical things like we need to have the slides on a USB probably... Um I'm imagining we need to have them on a USB to bring in um yeah we need to decide who's gonna do what slides. Um I don't think we – I think we should chop them down a bit if we can.</i>	<i>Action: Plan: Propose</i>

<i>Abram</i>	<i>Okay</i>	<i>Action: Align: Agree/Confirm</i>
<i>Carrie</i>	<i>Um but so the major – there’s sort of like the introductions...</i>	<i>Information: Share: Numbers</i>
<i>Abram</i>	<i>We can probably get rid of at least one of the kind of story slides</i>	<i>Action: Plan: Propose</i>
<i>Carrie</i>	<i>I was thinking the 3<sup>rd</sup> one about the um so- cial mobile world.</i>	<i>Action: Plan: Propose</i>
<i>Abram</i>	<i>Okay</i>	<i>Action: Align: Agree/Confirm</i>

In this exchange, although Carrie’s proposal is stated in a mitigated manner her recommendation is understood as a proposal – and it is met with another proposal that builds on it. Abram proposes the removal of a slide from a specific part of the presentation. Carrie then completes the proposal by suggesting the removal of one particular slide.

Whether they are intended to organize the activities of the team in a general or specific ways, utterances coded for Action: Plan give direction to the team. Utterances coded for Action: Plan can be directly stated by an individual, or they can be indirectly presented and built upon by the other team members.

## **Discussion Related to the First Research Question**

The basic question upon which this research project is built – identifying the verbal sensemaking patterns within team conversations across the arc of a lean startup entrepreneurship competition – has yielded four key results. In this brief discussion section these results will be integrated with the literatures of entrepreneurship and sensemaking.

The first result – that the Primary code Align is associated with a large number of the teams’ utterances – is consistent with a fundamental finding from the CA literature as a whole: speakers strive for solidarity in social interactions (Clayman, 2002). It may be a demonstration of the social skills mentioned in the entrepre-

neurship literature. While the literature on social skills has been limited to data that has come from interviews and questionnaires, its basic findings suggest that social competence matters to entrepreneurial success. It has proposed that entrepreneurial success is related in part to “effectiveness in interacting with others on a face-to-face basis” (Baron & Markman, 2003, p. 54) especially along dimensions of expressiveness in high-tech teams such as the ones in the study. Being able to convey alignment with team members – acknowledging their contributions, agreeing with and confirming their contributions, or disagreeing and contrasting with them – seems to this researcher to be a fundamental kind of expressiveness. As such, the finding of this inquiry about the frequent use of utterances coded for Align with both teams seems consistent with the concepts found in the entrepreneurship literature.

Moreover, the acknowledgment of verbal contributions of team mates might also be related to the concept of heedful inter-relating as described in the sensemaking literature (Weick, 1993; Weick & Roberts, 1993). While heedfulness includes much more than simple acknowledgement, heedfulness might be difficult to achieve without acknowledgement.

Heedful inter-relating also might be relevant in the interpretation of the frequent use of utterances coded for Meaning: Clarify in the verbal sensemaking of the teams in this study. Checking for understanding could be considered an expression of respect; the person who is checking cares enough about the other speaker’s intent to inquire about the received meaning. Similarly, volunteering additional information to ensure clear communication could be an indication of respect for the relationship and its shared goals. In some cases, utterances striving for clarification also might be expressions of individuals building shared mental models for the team and its tasks; constructing a virtual role system for future use.

The frequent use of utterances coded for Meaning: Claim by the teams in this study might be indicators of collaborative sensemaking in action. Utterances coded for Meaning: Claim reveal a speaker’s practical theory about his/her situation. Con-

sequently, a Claim is, in effect, a statement that expresses a “frame” (Weick, 1995). According to Weick, people are most aware of their sensemaking efforts in moments of uncertainty – when details in the environment, “cues,” do not fit within existing “frames.” If the teams in this study are encountering situations of uncertainty then they might need to verbalize their understanding of their situations in the process of interpreting cues and redesigning frames.

The high number of utterances coded for Information: Share: Data may be related to the context for the study. The teams are participating in a contest with a lean startup orientation, and they are encouraged and expected to gather and process information from the entrepreneurial ecosystem. Consequently, the high number of utterances associated with Information: Share: Data might be expected. A high number of Information: Share: Data utterances also might be expected with regard to theories that link entrepreneurial performance with the ability to obtain information (Baron, 2006; Shane, 2003): if a team member has acquired information, s/he would share that data with the team.

The context for the study – a contest – also might partially explain the large number of utterances associated with Action: Plan. As competitors, the teams would need to devote some portion of their interactions to the preparations for the judging events, for example.

In summary, highlights from the data about teams’ interactions in general include several prominent features:

- Utterances associated Action: Align are the most frequently occurring in these conversations;
- Meaning-making is a significant task for these teams with most of the utterances coded for Clarify and Claim;
- Utterances coded for Information: Share: Data account for the largest percentage of the Information Aggregate’

- When the Action: Align utterances are set aside from the rest of the Action Aggregate, utterances coded for Action: Plan account for the largest percentage of the Action codes.

This chapter reported on the results from the first Research Question that probed the basic observable sensemaking patterns within lean startup team conversations. The next chapter will present the results and findings from the second Research Question.

## **CHAPTER SIX: OBSERVATIONS FROM AN INDUCTIVE INQUIRY INTO VERBAL SENSEMAKING PATTERNS OF INNOVATIVE ENTREPRENEURIAL TEAMS ENCOUNTERING DIFFERENT TYPES OF UNCERTAINTY**

Because little is known about the verbal sensemaking behaviors used by innovative entrepreneurial teams as they enact their work, this study has been designed to analyze the workplace conversations of teams as they encounter the uncertainties inherent in the entrepreneurial innovation process. It analyzes the naturally-occurring conversations of teams while they are grappling with uncertainties about participating in a contest and about creating a minimum viable product. Three orienting questions were constructed to guide the research, and this chapter reports the findings from the second: What variations in sensemaking language exist when teams encounter different types of uncertainty related to their entrepreneurial quest? This chapter will present both descriptive statistics and thick descriptions to illuminate the findings relevant to this Research Question. It will conclude with a discussion about verbal sensemaking and uncertainty type as found in the data from the teams in this study.

To answer the question about verbal sensemaking patterns based on the types of uncertainty faced by these entrepreneurial innovation teams, the total number of utterances associated with the Aggregate categories of Information, Meaning, and Action from both teams was tabulated in association with the Product or Contest Episodes. The total utterances also were tabulated in association with the Acceptance and Growth Assumption segments. In this section, these numerical profiles are paired with thick descriptions to describe the sensemaking language used by the studied teams in various types of uncertainty.

Data suggest that the teams in this study used sensemaking language differently when talking about the Contest and the creation of their minimum viable products. When the teams were discussing the Contest, their utterances included a higher percentage of Action utterances than when involved in Product discussions. When

the team discussions were focused on the Product, they included a higher percentage of Information utterances. Differences between the verbal sensemaking patterns in the lean startup Validation Conversations exist but are subtle; the teams in general used a higher percentage of Information utterances when focused on their product's Acceptance possibilities and a higher percentage of Meaning utterances when focused on their team's Growth potential.

## **Finding Two: These Teams Have a Bi-modal Approach to Sensemaking Based on Uncertainty Type**

### Result 5: Action and Information utterances dominate Contest and Product conversations respectively

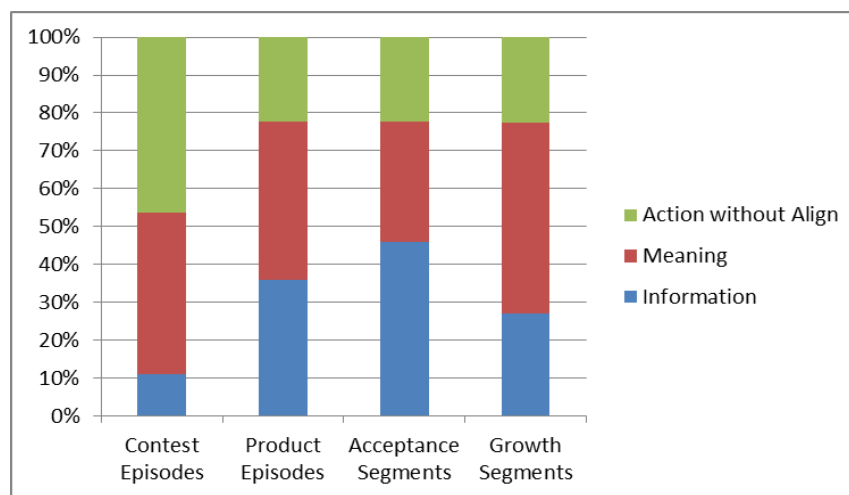
One of the earliest observations made during the unmotivated looking phase of analysis was that the recorded conversational data included interactions about the contest in addition to interactions about the minimum viable products. To value this observation, a Code for Contest Episodes and for Product Episodes was developed. Utterances coded for the Contest Episodes numbered 338 in total, and utterances coded for the Product Episodes numbered 397 when data from both teams are combined.

When the Aggregate Categories of Information, Meaning, and Action are considered for both Episode types slightly different profiles of observable sensemaking language emerge. Contest Episodes are marked by a high percentage (46%) of Action utterances (n=157) followed by Meaning (n=144, 43%) and Information (n=37, 11%). The Product Episodes are marked by a high percentage (42%) of Meaning utterances (n=166) followed by Information utterances (n=142, 36%) and then Action (n=89, 22%). It is worth highlighting that the utterances coded for Meaning account for a similar percentage of both Episode types: 43% of the Contest Episodes and 42% of the Product Episodes.

Additional variations in conversational composition can be observed when the Acceptance and Growth Assumption Segments are considered. (See Figure 6.1.)

Fewer utterances are devoted to Acceptance Segments (n=185) than to Growth Segments (n=212). Acceptance Segments have a higher percentage of utterances coded for Information, 45.94% (n=85) compared to the Growth Segments, 26.86% (n=57). Growth Segments have a higher percentage of utterances coded for Meaning, 50.47% (n=107) compared to the Acceptance Segments, 31.89% (n=59).

Figure 6.1. Aggregate Codes (using Action without Align) for Both Teams by Uncertainty Type



Source: Author

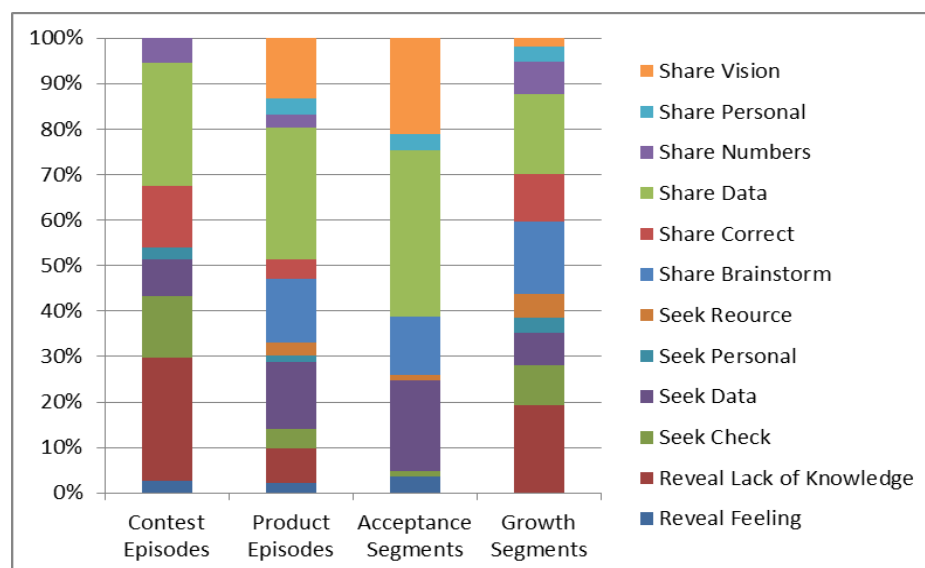
A deeper look into the Primary codes that comprise the Contest and Product Episode reveals several additional differentiating details.

#### Result 6: Shaping Product conversations with constricting forms of Information exchange (Vision, Resource, and Brainstorm)

When the Information Primary Codes are unpacked it becomes clear that utterances coded for Seek: Resources, Share: Brainstorm, and Share: Vision only occur in the Product Episodes. These three utterance types occur in both the Acceptance and Growth Segments. However, utterances coded for Resources and Brainstorm tend to be present in the Growth Segments whereas utterances coded for Vision tend to be present in the Acceptance Segments. (See Figure 6.2.)



Figure 6.2. Information Primary Codes for Both Teams by Uncertainty Type



Source: Author

The code of Information: Share: Brainstorm is comprised of utterances that present product concepts that are disconnected from the feedback provided by the relevant ecosystem of customers, advisors, and teachers. While in theory the introduction of ideas beyond the ecosystem could productively broaden a conversation about product and market possibilities, Information: Share: Brainstorm utterances can disrupt the processing of valuable but difficult feedback in the interactions of the teams studied.

For example, on one occasion the Green Team is grappling with the possibility of a pivot – a strategic change based on their understanding of their target market. Although the contribution of utterances related to Information: Share: Brainstorm at such a moment might be expected to help the team productively reframe their understanding of the product and the market, Brainstorm-coded utterances actually tend to have a different impact on team progress as this excerpt reveals:

*Abram shares his concern and confusion: “Yeah, I don’t know I’m just like... I struggle sometimes. It’s like do we stay focused on the [developmentally-delayed kids] thing or say actually it’s like this broader thing? Like the [developmentally-delayed kids] thing helps*

*us stay focused...” Carrie validates his concern and enriches the exchange about this critical topic by sharing her own thinking, “It does, but then, and the reason I’ve been struggling with it as well is that if we do stay focused on it it will drive content to a certain extent.” In agreement Abram says, “Yeah”, and Carrie continues: “Like, or do we focus on a broader audience. I don’t know.” But instead of expanding her thoughts or allowing another team member to advance the conversation about this serious and sensitive matter Carrie changes the subject: “So can I can I take us off on one little thing before we get too focused which is my little bot experiment over the break was remember I was telling you about this game that my dad used to do with us, “Draw Whatever.” So I I started playing it with him...” The conversation follows this Brainstorm utterance and focuses on the online game that Carrie’s dad plays. Then the conversation shifts to business models of digital products in general – online games and apps – and how to signal the quality of their product to their main market segment. More than 10 minutes later, Abram integrates the Brainstorm with its topical point of departure and says, “So content, definitely, we need to make the big focus of this period of time... continue with customer... I think broaden with customers... I guess that’s what I was getting at is that, you know, like, you know, I think, you know, keeping a focus maybe of [developmentally-delayed kids] is like, you know, for the business plan as a beach head and things like that makes sense cause it focuses us. And it’s a good story. And it’s related to the development of the technology and everything else. But like broadening the people that we’re ping-ponging for information just because it’s like it’s really hard to tell with these people.” Yoichi builds on Abram’s comparison and suggests that he has some concerns about the acceptance and growth potential of their envisioned product with original target market: “... I initially thought you know we should more focus on [devel-*

*opmentally-delayed kids], but I started to feel like a you know there there is a core, you know, core customer base which would value most, you know, this sort of product. And of course [developmentally-delayed kids] are, you know, um part that sort of wider that market base, but I'm not sure whether it's worth, you know, narrowing down our initial, you know, assumption of the initial market at this stage too much. Cause, you know, cause I feel – I started to feel like, you know, it might be difficult to fully accommodate their um expectations or needs.” Carrie agrees with Yoichi and shares her similar concerns: “There are also a lot more maybe barriers to rolling out to that community in some ways because you’re talking about how it’s important to sort of have validated content So it may take longer, and so that I think it’s a good point.” Yoichi claims that the original market is, “still worth pursuing 'cause definitely there is burning desire to have a great, you know, great, you know, products for them. But at the same time we we need to be mindful that, you know, there is some other better opportunities initially. So that we would be able to go back to that one at a later stage.”*

While the introduction of a Brainstorm set of utterances did move the team out of their apparent distress about the product fit and market growth potential, it guided them without any validating information from the ecosystem. The team did not have evidence of interest in the prototype from a prospective customer in the new target market. In other words, while they had been receiving negative feedback on their prototype (mainly that it was too difficult to use), they had no data-informed reason to believe that a different, more generic market would want the product as it was envisioned at that time either. Thus the Brainstorm utterance did evoke an apparent pivot – the team shifted market segments – but they were adapting away from negative feedback rather than toward validating evidence that described a potentially successful minimum viable product.

It is also interesting to note that the Comparison utterance contributed by Abram at the genesis of this Brainstorm sequence is centered on the existing vision for the product. His concern seems to stem from the conflict between the challenges they've been facing with the existing market segment and the team's existing vision for the product. He is not grappling with conflicting pieces of data from the ecosystem about the product; he is struggling to find a way to honor negative market feedback without changing the product vision.

Utterances coded for Information: Share: Vision, like those coded for Information: Share: Brainstorm, are unique unto the Product Episodes. Utterances coded for Information: Share: Vision convey the future features or underlying theories related to the product in development; the statements are not anchored in feedback from the ecosystem. The power of an entrepreneurial vision statement is that it potentially can help people imagine products and situations before they exist. However, that power can also pose a problem – causing people to ignore evidence in the service of maintaining a consistent vision – as the following Green Team interaction reveals.

*After saying that the product meant for developmentally-delayed children was too difficult for his developmentally unchallenged nieces to use – that, in fact, only he (an accomplished software engineer) could operate it when they played together – Abram explains that he sees this as part of the vision: as “an example of like -- remember how I was saying this is a kind of a concept from participatory communities... you have these different entry points in participation?” As Abram speaks, Yoichi and Carrie indicate periodically that they are following his train of thought: “...and this is an example of like the most advanced participation... right? Like I’m creating the whole story on fly... and it definitely and that's what like it really was like wow this is like – there's a ton of learning in this is; actually, like, I'm challenged in some way! You know, I mean it was a positive challenge because they were so like having fun which was also*

*like, you know, it's almost like, you know... I can imagine a commercial, you know, where it's like you know that special time... right? You know what I mean?" After another round of acknowledgement from Yoichi and Carrie, Vera attempts to connect Abram's vision with the information they've gathered from the market: "Yeah, I think that's one way... The other way is you could look at stories. And you could give different endings to the stories so for instance a sad a happy a humorous..." From there the Vera, Yoichi, and Carrie talk about stories and the importance of content. As Yoichi says, "content is absolutely you know essential,, and in order to understand what sort of a content we would need I mean both the, you know, technical point of view and the, you know, the story point of view it's important for me to understand, um, what exactly they want to have, you know, like different age range and different sort of, you know, particularly for [developmentally delayed] kids." Abram repeatedly offers, "Yeah," in acknowledgement of Yoichi's contributions. He eventually expresses agreement and sees the need to develop good content as a way of validating the product as it exists. He says, "Yeah, I would say that like, on that note, like content is king because you know what I you know I've downloaded a bunch of different you know children's boo – either books or book applications, either way you want to think about it – and uh, you know, like I said, mine, you know, technically speaking, I think is better than almost everything out there."*

When Abram shares his vision about the theory of "participatory culture," he uses it as a springboard to brainstorm about a future television "commercial" for the product as it is currently imagined. Attempts to reconcile conflicting evidence – how will the target market (developmentally-delayed children) use a product which is "challenging" for a healthy adult with deep expertise – emerge in the conversation. For example, Vera offers a contribution coded as Information; Share: Brainstorm that could help to integrate the existing prototype and product vision with the abilities of

young users with developmental challenges, and Yoichi offers a statement coded as Meaning: Claim: Absolute about the importance of content. However, Abram doesn't yield. Rather than explore ways to alter the product based on the evidence from the market or the suggestions of the team, Abram deflects these deviations from his existing vision, and defends the (technical) superiority of the product as it is. This leaves the team with a dilemma (that they eventually and temporarily resolve by abandoning their initial market segment in favor of a general market sans evidence of interest.)

Utterances coded for Information: Seek: Resource – efforts by speakers to bring up the subject of the availability of money, time, or talent – also occurred only in the Product Episodes. In each recorded case, Information: Seek: Resource utterances preceded sequences dominated by Action: Plan utterances as the following interaction from the Green Team illustrates.

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
Vera	<i>I wanted, uh, one point that Yoichi brought about the fact is that when we reach out to the customer we obviously get more insight in terms of what are the kind of functionalities and features that they will want</i>	<i>Action: Facilitate</i>
Abram	<i>Yeah</i>	<i>Action: Align: Acknowledge</i>
Vera	<i>and even if we do provide them some sophisticated functionalities that it might not be an immediate need, and we might be a little ahead of the technology curve on that the count. But the second point was that whatever needs or interests that we identify from the market can we -- will we have adequate number of people who at the product end who would be able to translate that into product features</i>	<i>Information: Seek: Resource</i>

Abram	Yeah	Action: Align: Acknowledge
Vera	<i>within within a particular window was was the thinking</i>	[Continue Information: Seek: Resource]
Abram	Yeah	Action: Align: Acknowledge
Vera	<i>So January, in fact, what we could do is the day we come back on the seventh or eighth when we do meet up. We could spend the first meeting largely on the customer.</i>	Action: Plan
Abram	Mm-hm	Action: Align: Acknowledge
Vera	<i>But within the first two weeks maybe you can spend a lot more time also on product part of the product functionality parts of it and as we get more data from the customers then we have a</i>	Action: Plan
Abram	Yeah	Action: Align: Acknowledge
Vera	<i>a more detailed thing in terms of if they're saying qualitatively certain characteristics what will it eventually translate in the back end to a feature that will give that expectation of the experience that the consumer wants.</i>	[Continue Action: Plan]
Abram	Yeah	Action: Align: Acknowledge
Vera	<i>So we need to delineate a lot of general comments into specific technical features and that's going to be a fairly complex process.</i>	Meaning: Claim: Absolute
Abram	Yeah	Action: Align: Acknowledge

Vera mentions a concern about the available resources – the timeframe and the human talent – necessary to translate customer feedback into product features. As the team's conversation unfolds she positions these issues as part of a plan; how

they can use their meeting time in January to develop the product with the resources that they'll be able to harness.

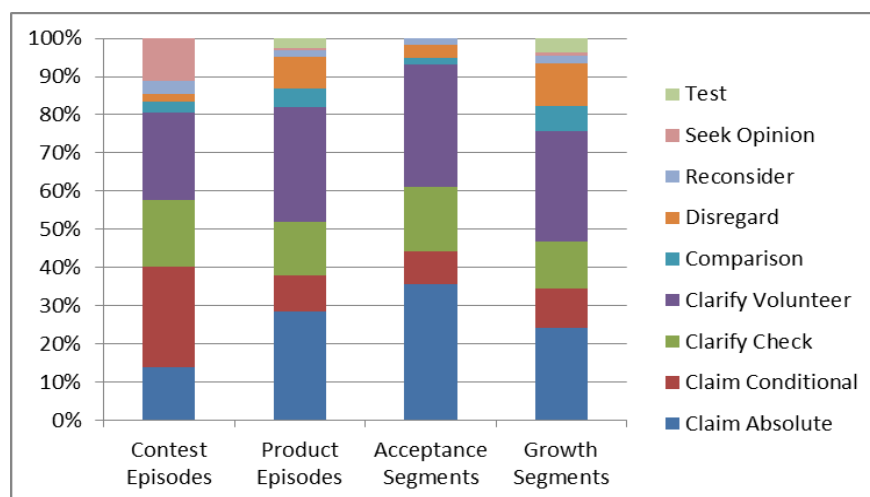
Other features of the Information-coded utterances with regard to uncertainty types when both teams are considered include:

- Share: Data accounts for the highest percentage of utterances in both Episode types;
- Share: Brainstorm accounts for the large percentage of utterances in the Acceptance Segments;
- Share: Vision accounts for a large percent of utterances in the Product Episodes and in the Acceptance Segments;
- Reveal: Lack of Knowledge is not present in the Acceptance Segments.

A look at the Meaning Primary Codes shows that utterances coded for Claim or Clarify dominate all of the Episode and Segment types. However, the distribution of these code types differs by uncertainty type. As Figure 6.3 shows, Contest Episodes are comprised of 13.88% Claim: Absolute (n=20), 26% Claim: Conditional (n=38), 17.36% Clarify: Check (n=25), and 22.91% Clarify: Volunteer (n=33). Product Episodes have a different mix: 28.31% Claim: Absolute (n=47), 9.63% Claim: Conditional (n=16), 13.85% Clarify: Check (n=23), and 30.12% Clarify: Volunteer (n=50). The two Assumption Segment types also have distinct profiles. Acceptance Segments include 35.59% Claim: Absolute (n=21), 8.47% Claim: Conditional (n=5), 16.94% Clarify: Check (n=10), and 32.20% Clarify: Volunteer (n=19). Growth Segments are comprised of 24.29% Claim: Absolute (n=26), 10.28% Claim: Conditional (n=11), 12.14% Clarify: Check (n=13), and 28.97% Clarify: Volunteer (n=31). Utterances coded for Seek Opinion (n=16) occur most often in Contest Episodes (11.11%). Utterances coded for Disregard (n=14) occur most often in Product Episodes (8.43%).



Figure 6.3. Meaning Primary Codes for Both Teams by Uncertainty Type



Source: Author

### Result 7: Shaping Product conversations with utterances coded for Meaning: Disregard

Utterances coded as Meaning: Disregard are prideful comments that express a speaker's belief that s/he knows better or is able to dismiss a competitor's product, a team mate's concern, or a customer's experience. Based on the interactions analyzed in this study, Meaning: Disregard tends to be used when possible challenges to the integrity or quality of the product surface. In the single case in which Meaning: Disregard occurs in the Contest Episodes the utterance type is used by a team member to highlight a product accomplishment.

Although perceived challenges to the product are not always enveloped in direct disagreement between team mates, one example of a Green Team member contributing a statement coded for Meaning: Disregard occurs at such a time. As mentioned in the earlier section about Action: Align: Disagree at the Aggregate level of coding, an exchange exists in which Vera articulates a disagreement with Abram in a direct confrontational way. The following excerpt demonstrates the use of an utterance coded for Meaning: Disregard as that interaction unfolds:

*Bothered about the market's reaction to the usability of the emerging product Vera disagrees with Abram's prioritization of develop-*

ment tasks by reminding him that improving the product's ease-of-use is important. In response Abram says, "Yeah, yeah...but to me that's that's like we get to that in year two." Vera dryly replies with, "Year two." Abram says, "Yeah, like we're going back to the other day; we were talking about the minimum viable being good content. And you're able to take pictures of things. And Record your..." Carrie interrupts him with a statement of Correction, "Easily create" which Abram acknowledges before finishing his thought, "...yeah... on a device..." While Carrie and Yoichi add sounds of acknowledgement, Abram offers a vague plan, "...in that, you know, the templates and your own creation and all that. We get to it asap but it's later features and added value, you know, because otherwise It's gonna take, you know, otherwise we're gonna like burn money for like a year when we don't need to." Vera shares information from their projections and reminds the team that, "...as it is our financial model already talks about burning money for 2 years." Abram acknowledges her contribution with, "Yeah," and Vera Clarifies these assumptions, "Will we be talking about 2 years? Really?" In response Abram contributes an utterance of Disregard -- expressing that he knows better than his team and that his product is better than any competitors' efforts – by stating: "Where I think; it's like 'cause even, you know, h right now the technology is, you know, as good or better than everything on the market in my opinion..."

In addition to over-ruling his team mate's concern, Abram's statement of Meaning: Disregard suggests that he believes that he knows better than other companies with analogous products; that he even knows better than the customers that have been giving the Green Team negative feedback about usability.

While most Meaning: Disregard statements are found in the Product Episodes and emerge in exchanges that challenge the superiority or integrity of the prototype one alternative use of the code type was present. A lone use of the code type was

found in the Contest Episode, and in this Green Team exchange the prideful dimension of the code was at the forefront.

*With the demo day coming soon the Green Team has focused their attention on what they would like to present to the judges. Given that the development of the prototype is important to this contest, the team knows that the judges will want to see what they have. And Abram is ready. He claims, "Already it's like I mean, you know, if you have an android device you can install this application and download 4 stories to your phone." Carrie expresses her agreement with, "Yeah," while Abram takes pride in his accomplishment: "That's a pretty f-ing good demo!" Carrie and Yoichi support his perspective with sounds of agreement, and Abram continues, "I can tap myself on the back."*

Unlike the use of utterances coded for Meaning: Disregard in the Product Episodes, the usage of Meaning: Disregard in this Contest Episode is not contentious. However, it is still conveying a belief of product superiority; in this case over the prototypes being developed by other teams in the contest (none of which are direct competitors to the Green Team in the marketplace).

Whether they are intended to assert the superiority of the product and its design when it is under scrutiny or not, utterances coded for Meaning: Disregard express pride in product accomplishments and in the ability of its creator(s).

#### Result 8: Shaping Contest conversations with utterances coded for Meaning: Seek: Opinion

Utterances coded for Seek: Opinion – open requests for another speaker to share his/her point of view – tend to occur in the Contest Episodes. Only one instance of its use was found in the coding of the Product Episodes. In all cases, the contribution of an utterance coded for Meaning: Seek: Opinion tended to invite utterances

coded for Action: Plan, Meaning: Claim, or additional Meaning: Seek: Opinion. All of these reactions, in fact, emerge in the following excerpt from the Yellow Team:

*As the Team prepares for the Finale their attention turns to the items that they'll make available at their demo table. Wanting Shahrnaz to share her opinion, Seth asks, "Should we have an investor pitch that we're willing to let anyone take, or should we not have something anyone can take?" While he is speaking Shahrnaz makes a sound of acknowledgement and then suggests, "I think we should not. We should just say like if you're interested to go [to our website], and um...". Seth agrees by saying "Okay" while she is speaking and together they finish her sentence: Seth says "And leave us your contact information" while Shahrnaz says, "... and leave us, yeah, and let us know...". Moving the conversation forward with a follow-on proposal, Seth asks, "What if we print up a sheet for signup or something?" Shahrnaz acknowledges his suggestion by repeating it aloud, "Hmmm... print out a sheet...". Voluntarily clarifying his suggestion, Seth adds, "... So, like, you can write your name or something...". Shahrnaz expresses her agreement by saying, "Yeah." Seth then seeks her opinion again by asking, "Do you think anyone will?" Shahrnaz promotes a plan of action by responding, "We might as well have [the sheet]."*

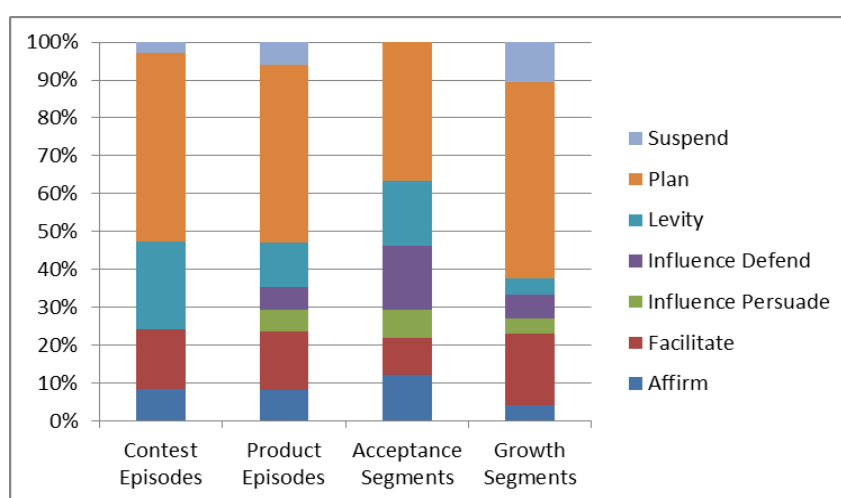
It is interesting to note the collaboration that is sparked by Seth's initial request for Shahrnaz's opinion. The sincerity of his invitation for her input is signaled by the structure of his question; he poses a few choices that he can imagine the team doing. When Shahrnaz offers an alternative preference – to refer everyone to their website and gather contact information there – Seth is able to anticipate her thoughts, incorporate them, and echo them at end of her sentence. With the benefit of her perspective Seth is able to offer another new possibility – the sign-up sheet. In other words, by seeking Shahrnaz's opinion, Seth's initial ideas are reconfigured and lead him to consider another new possibility for the team.

Other features from Meaning Aggregate when the combined conversations from both teams by uncertainty type are examined include:

- Utterances coded for Meaning: Claim: Conditional account for a higher percentage of the Contest Episode interactions than the Product Episode interactions, and the smallest percentage of utterances coded for Meaning: Claim: Conditional is found in the Acceptance Segments;
- Utterances coded for Meaning; Comparison are used more frequently in Product Episodes and Growth Segments than in Contest Episodes or Acceptance Segments.

An examination of the Action Aggregate suggests that utterances coded for Action: Plan dominate all Episodes and Segments. Utterances coded for Action: Influence (n=15) account for 16.85% of the Product Episodes but are not present in the Contest Episodes. Utterances coded for Action: Suspend (n=10) are used everywhere except the Acceptance Segments. Utterances coded for Action: Levity (n=36) occupy a higher percentage of the Contest Episodes (17.19%) than they do Product Episodes (10.11%). (See Figure 6.4.)

Figure 6.4. Action Primary Codes (without Align) for Both Teams by Uncertainty Type



Source: Author

## Result 9: Shaping Product conversations with utterances coded for Action: Influence

Utterances coded as Action: Influence included efforts to impress team mates and efforts to explain the status of the project either by accepting or deflecting responsibility for its perceived shortcomings. Influence-coded utterances tended to be contributed by a speaker when a divergence of perspectives – view points that could range from subtle doubts to direct challenges – about the product was present in the conversation. They also tended to be offered near utterances (from the same speaker) that were coded for Information: Vision, Meaning: Claim: Absolute, or additional Action: Influence contributions. This excerpt from a Green Team exchange captures many of these code features:

*When describing his experience using the prototype with his nieces Abram mentions that he needed to “digitally hand-cut” all of the images. Carrie requests data by asking, “How hard is that?” Abram replies by sharing his vision based on a scholarly theory: “Um I mean it is not so hard, but it takes time. You know, the thing is is there – remember I was talking a while back about this thing called uh uh participatory participatory design or uh participatory systems... Well I don’t know what they call it now uh, but the the guy who pushes that um... and in this one really influential paper of his he has this argument or not argument – he’s, you know, talking about digital literacy and, you know, we think about reading writing and arithmetic, right? But like increasingly, you know, we live in a digital world, right? With like a need for...” While he speaks Carrie indicates that she is following him by offering, “Yeah”. Abram starts to use the scholarly theory as a lever of influence – a reason to defend what others might see as the product’s lack of user friendliness. He says, “...for digital literacy, like understanding how we use pro, you know, software and these types of things. And so even though it took a while, like kind of from a learning perspective it real-*

ly is, you know, it's like reading writing and arithmetic in digital literacy. You know? So it's like – fluency in understanding how to work with digital media is actually like valuable.” After Vera makes a sound of acknowledgement, “Mhm,” Abram continues to paint the future for the product by explaining, “With that said, um, I also, you know – hopefully one of the things I’ll get done this semester uh is I like I already have some code in place it just hasn’t been integrated cause there’s a bunch – like so basically the part of this, you know, what I talked to you about like ‘oh I want to just be able to take a picture and it’s there.’ Um I mean I have that; I have code that would like allow you to like, you know, I could take your picture. And then in there I just like touch the colors I want to disappear and they disappear. And then I would actually have it; oh no I have... so I have this code already that allows you just to touch the picture and whatever color you touch gets erased um, and then you can also, you know, kind of pinch and grab for cropping and then, you know, it crops it um, you know, so so it’ll end up that... What I was saying; it just kinda highlighted some of the slow points of the system and like those slow points will get taken care of...” Carrie offers an occasional, “Yeah,” to acknowledge that she is paying attention while Abram speaks. He then begins to make more inflexible assertions about the future of the product, “In some respects and other areas, like, if you’re just, you know, sometimes you have to edit the pictures. I mean there’s just no way around it. But to me that’s part of the creative learning process.” Again, Carrie acknowledges that she is listening by saying, “Yeah.” Abram starts to go on by saying, “But anyway so yeah so we...”, but before he can continue Vera interjects with a request for data: “Going back to taking that picture and inserting it. You said it’s a long process but how much time does it actually take?”

In this conversation, when the product's current ease-of-use is again the focus, Abram uses utterances of Action: Influence. Initially, he cites an external expert's views which in some instances might impress and persuade a listener to see the product's possible flaws as desirable features. He then begins to take ownership of the "slow points" of the system and the need to fix them; a conversational move that signals responsibility and agency. However, his final assertion about the product's evolutionary path suggests that he is defending the product as it is:

*...sometimes you have to edit the pictures. I mean there's just no way around it. But to me that's part of the creative learning process.*

By suggesting that changes to the product will be minimal and alleged shortfalls should be considered benefits, Abram is attempting to influence the team to join him in his quest as he has envisioned and articulated it.

While it is possible that utterances coded for Action: Influence might actually lead listeners to a change of perspective, in this and other cases from the studied conversations the utterance coded for Action: Influence do not have that impact. In fact, Vera's response – a request to return to the previous point – is the typical conversational pattern that emerged in this study. In this case, her facilitation phrase – "going back to" – returned the team's conversation to a data-driven context. In other cases, the same phrase or others were used following utterances coded for Action: Influence to reconnect the dialogue with concerns about a product's feasibility based on the team's interpretations of the feedback from customers, advisors, and teachers.

Other highlights within the Action Aggregate that emerge when examining conversations from both teams by uncertainty type include:

- Utterances coded for Action: Levity account for higher percentages of usage in the Contest Episodes than in the Product Episodes;
- Utterances coded for Action: Influence are not present in the Contest Episodes.



## **Discussion Related to the Second Research Question**

The second question considered by this research— identifying the verbal sense-making patterns based on types of uncertainty – has generated another key finding based on five results (numbered as five through nine within the complete set of results). In this brief discussion section, results related to the second question will be integrated with the literatures of entrepreneurship and sensemaking.

The fifth result – that Contest Episodes have more Action utterances while Product Episodes have more Information utterances – might indicate that the teams used causal and effectual reasoning based on the type of uncertainty. The uncertainty of the Contest is defined largely by its outcome – no one knows who will win – but the concept of contest participation in general is familiar to the team members, and the end state of a contest – the fact that judging will occur on a specific date – is predictable. However, the product has an undetermined final structure; what a minimum viable product can become is negotiable based on a team's changing circumstances (and their interpretations of those circumstances.) Team members engaged in conversations about the contest might be drawing on causal means to manage that type of uncertainty, whereas team members conversing about the evolution of their minimum viable product might be evoking more effectual means of coping with that type of uncertainty. Some researchers have stated that entrepreneurs tend to use both causal and effectual modes of operating (Sarasvathy, 2008), and this result might be evidence of entrepreneurs using a situated bi-modal approach.

The possible use of a bi-modal approach by the teams seems to be supported by the use of utterances coded at the Primary level as well as the Aggregate level. If a causal means of reasoning is favored when teams grapple with the uncertainties of a contest, this could explain the more frequent use of utterances coded for Action: Levity in Contest Episodes. Humor can paint a ridiculous portrait of a team's emerging situation – and it can be understood as ridiculous (and humorous) only if people can contrast it with a predicted and ordinary future scenario. Conversely, if

effectual reasoning is favored when teams cope with the uncertainties of the minimum viable product, this could explain the more frequent use of utterances coded for Information: Resource. These means-related contributions of information might be offered to help the team control uncertainty and maximize success by effectuation (Sarasvathy, 2001).

Information: Resource-coded utterances, along with those coded for Information: Vision and Information: Brainstorm, were found only in the Product Episodes. This finding initially seems to suggest a practice of improvisation and bricolage (Hmieleski et al., 2013). However, in these specific conversations, utterances coded for Vision and Brainstorm do not seem to function in expansive ways. Instead they seem to block alterations to the emerging prototype; the utterances remind team members of a motivating, unchanging ideal or redirect team member attention to a topic that does not threaten the prototype as previously defined. As such the utterances coded for Vision and Brainstorm seem to be used as techniques for managing tension; they are contributed at moments when dissonance emerges between team members about the features of the prototype. In some ways the use of utterances coded for Vision and Brainstorm seem to complement Action: Influence, a code type which also was found only in Product Episodes. All of these ways of interacting – techniques to sway the conversation away from the challenges of incorporating emerging cues that contrast with existing frames – might suggest a prevailing and rather inflexible commitment to an imagined minimum viable product. Having premature cognitive commitments, as the use of these code types might suggest, has been shown to hinder learning and creativity (Langer, Hatem, Joss, & Howell, 1989).

Meaning: Disregard is a code type found mostly, but not exclusively, in the Product Episodes. The use of utterances coded for Disregard could be another signal of premature cognitive commitments (Langer et al., 1989); commitments that could negatively impact product innovation. The prideful utterances coded as Meaning: Disregard are almost the antithesis of the utterances coded for Meaning: Seek: Opinion which were found mostly in the Contest Episodes. The use of Meaning:

Seek: Opinion could be evidence of a kind of help-seeking and adaptive reframing (Hargadon & Bechky, 2006) related to reflective dialogue and group creativity.

In summary, conversational composition differs when these teams are sensemaking about the development of a minimum viable product or about their involvement in a contest. This suggests that the teams may use causal and effectual approaches to their work based on uncertainty type.

Observations about the verbal sensemaking patterns used in different types of uncertainty include several additional features:

- Information: Share: Brainstorm accounts for a large percentage of utterances in Acceptance Segments;
- Information: Share: Vision accounts for a large percent of utterances in Product Episodes and Acceptance Segments;
- Information: Reveal: Lack of Knowledge is not present in Acceptance Segments;
- Utterances coded for Action: Levity account for higher percentages in Contest Episodes than in Product Episodes;
- Utterances coded for Action: Influence are not present in Contest Episodes;
- Utterances coded for Action: Suspend are not present in Acceptance Segments;
- Utterances coded for Meaning: Claim: Conditional account for a higher percentage of usage in Contest Episodes than in Product Episodes;
- The smallest percentage of utterances coded for Meaning: Claim: Conditional is found in Acceptance Segments;
- Utterances coded for Meaning: Disregard occur most frequently in Product Episodes, especially Growth Segments.

Because these features emerge with greater clarity in the investigation into language patterns and performance level they will be described in the next chapter which presents the findings from the third Research Question.

## **CHAPTER SEVEN: OBSERVATIONS FROM AN INDUCTIVE INQUIRY INTO VERBAL SENSEMAKING PATTERNS OF INNOVATIVE ENTREPRENEURIAL TEAMS IN RELATION TO CONTEST RANKING**

The third question of this research project seeks to reveal what, if any, connection might exist between the observable sensemaking language of these teams and their performance levels as determined by their final placement in the lean startup contest. Data related to this question suggest that utterances coded as Meaning: Claim: Conditional, Action: Levity, and Action: Suspend were associated more often with the high-performance Yellow Team while utterances coded as Action: Influence, Information: Share: Brainstorm, and Information: Share: Vision were associated with the low-performance Green Team. These and other contours of the verbal sensemaking behaviors demonstrated by the teams in this study will be explored in detail in this chapter.

To answer the question about verbal sensemaking patterns based on the performance level of the studied entrepreneurial innovation teams, the total number of utterances associated with each team and team member was tabulated in association with the Aggregate codes (Information, Meaning, and Action without Align), the Primary Codes, and the Product or Contest Episodes. The individual team totals for the Aggregate codes also were tabulated in association with the Acceptance and Growth Assumption segments; efforts to achieve more granular levels of analysis were hindered by lack of data.

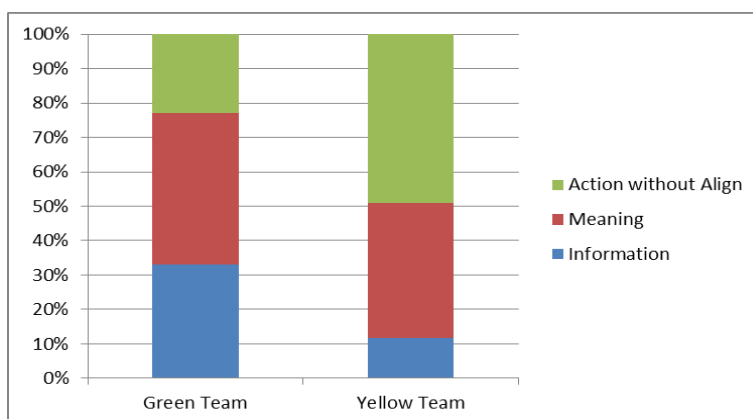
### **Finding Three: The Use of Flexible (or Inflexible) Language Forms Differentiate the High- and Low-Performance Teams in this Study**

#### **Result 10: The high- and low-performance team favored Action and Information language respectively**

When the sensemaking language patterns of the two teams are compared noticeable differences can be seen. (See Figures 7.1, 7.2.) The bottom-ranking Green

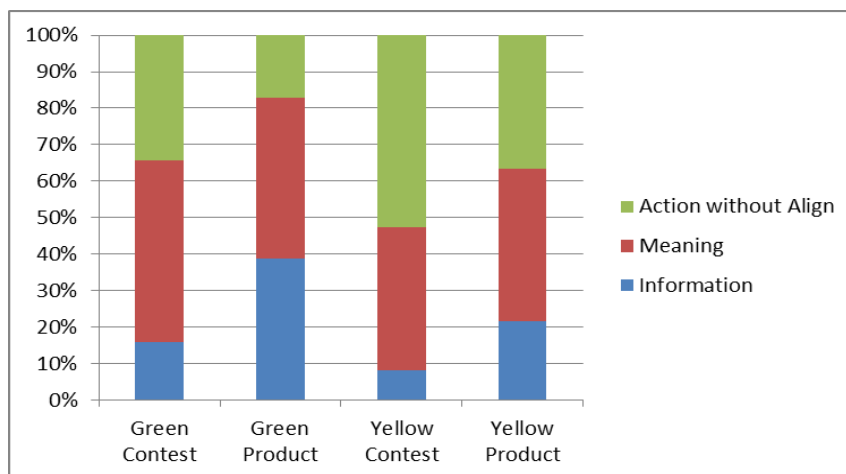
Team's conversations were comprised of 33% Information (n=144), 44% Meaning (n=192), and 23% Action (without Align) (n=100). The top-ranking Yellow Team's conversations had the following composition: 12% Information (n=35), 39% Meaning (n=118), and 49% Action (without Align) (n=147). The same basic patterns – that the Green Team tends to use more utterances coded for Information while the Yellow Team tends to use more utterances coded for Action – continue to be present even when the Episode Types are considered.

Figure 7.1. Total Information, Meaning, and Action (without Align) Utterances by Team



Source: Author

Figure 7.2. Information, Meaning, and Action (without Align) Utterances by Team and Uncertainty Type



Source: Author

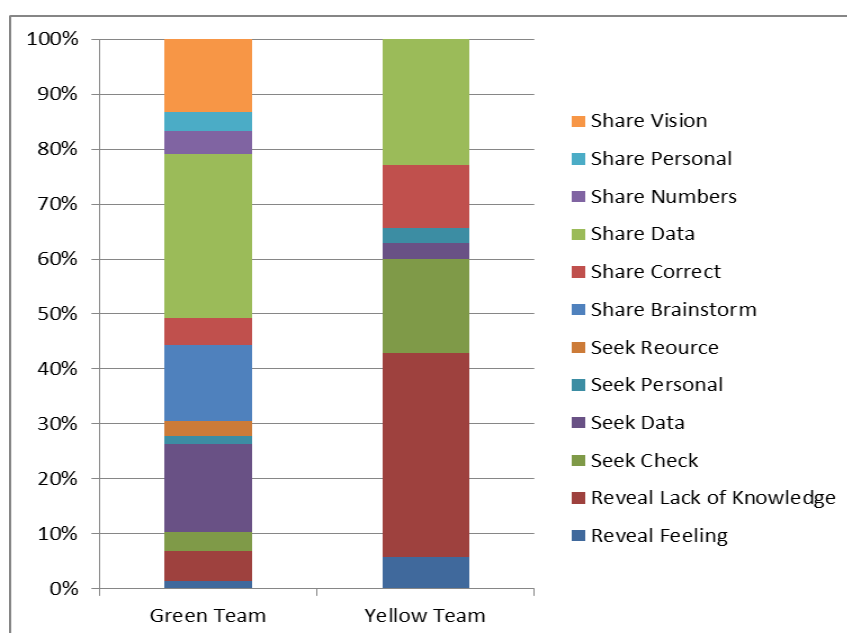
Additional distinctions between the two teams can be found when the lower-level codes associated with their utterances are considered.

Result 11: Utterances coded for Information: Share: Vision and Share: Brainstorm are exclusively used by the low-performance team and mostly occur in Product Episodes

Result 12: Utterances coded for Information: Seek: Check and Reveal: Lack of knowledge are used more frequently by the high-performance team

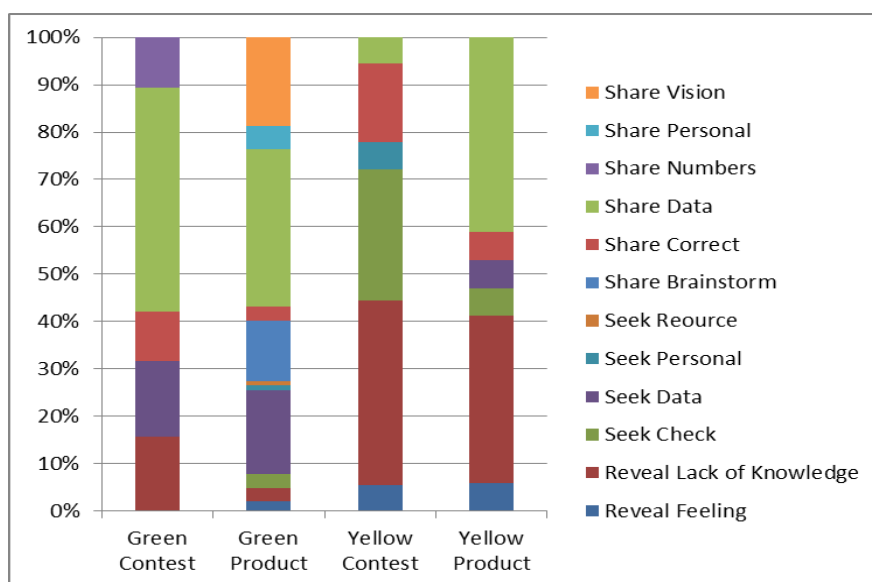
Information-coded utterances for the bottom-performing Green Team included Share: Vision (n=19), Share: Brainstorm (n=20), Share: Numbers (n=6), and Share: Personal (n=5) while the top-performing Yellow Team had zero utterances in all of these code categories. While both teams had utterances coded for Reveal: Lack of Knowledge, the Yellow Team had 37% of their utterances (n=13) coded in this manner compared to 5.55% (n=8) for the Green Team. Moreover, while utterances coded for Share: Numbers occur only in the Green Team's Contest Episodes, utterances coded for Share: Vision, Share: Personal, and Share: Brainstorm occur only in their Product Episodes. (See Figures 7.3, 7.4.)

Figure 7.3. Total Information Utterances by Team



Source: Author

Figure 7.4. Total Information Utterances by Team and Uncertainty Type



Source: Author

Because examples of team member interactions related to the utterance codes Information: Share: Vision and Information: Share: Brainstorm have been provided in Chapter Six, excerpts featuring those language forms will not be repeated here. Similarly because utterances coded for Information: Share: Numbers and Information: Share: Personal are infrequent although exclusive to the low-performance Green Team, they also will not be broken out by specific example. However, the utterances coded for Information Seek: Check and Information: Reveal: Lack of Knowledge have not been previously excerpted and they occur frequently in the conversations of the high-performance Yellow Team. They will be unpacked in this section.

Although the total number of utterances coded for Information: Seek: Check in the data is small, the high-performance Yellow Team uses these utterances with greater frequency than the low-performance Green Team. The use of Information: Seek: Check occurs when a speaker wants to verify that s/he has correctly understood the contribution of another speaker as demonstrated by the Yellow Team in the following excerpt:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Seth</i>	<i>What what's the term again? End use</i>	<i>Information: Seek: Check</i>
<i>Shahrnaz</i>	<i>End us build an end user profile</i>	<i>Information: Share: Correct</i>
<i>Seth</i>	<i>Okay</i>	<i>Action: Align: Acknowledge</i>

The use of Information Seek: Check is always met with an immediate response in both teams' interactions. Utterances coded for Information: Seek: Check suggest a willingness to expose a temporary lack of informational certainty, but utterances coded for Information: Reveal: Lack of Knowledge express something more than a need for a reminder. Utterances coded for Information: Reveal: Lack of Knowledge express a speaker's awareness of a need for information of a deeper kind. Not only are utterances coded for Information: Reveal: Lack of Knowledge used much more frequently by the high-performance Yellow Team than the low-performance Green Team, the ways that the teams use these utterances seem to differ.

In the case of the high-performance Yellow Team, utterances coded for Information: Reveal: Lack of Knowledge can display recognition of the limits of the team's knowledge and abilities as this excerpt shows:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Seth</i>	<i>You should do that first and then we revisit our numbers</i>	<i>Action: Suspend</i>
<i>Shahrnaz</i>	<i>Yes</i>	<i>Action: Align: Agree</i>
<i>Seth</i>	<i>Yeah we should do that first</i>	<i>Action: Plan</i>
<i>Shahrnaz</i>	<i>Yeah</i>	<i>Action: Align: Agree</i>
<i>Seth</i>	<i>Um I mean there are only main the main help there I'll give you is to question your assumptions</i>	<i>Information: Reveal: Lack of Knowledge</i>
<i>Shahrnaz</i>	<i>no I think that's that would be really helpful</i>	<i>Action: Affirmation</i>



While Seth expresses that he is not the expert in creating a user profile – especially since he is not a prospective customer for the product and Shahrnaz is – he is still willing to offer what he can. He reveals not only his lack of knowledge about the prospective user’s needs but also the need to question what they think they know. His statement suggests that he is aware of the limitations of their knowledge, and that those limitations might be greater than they realize.

The lower-performing Green Team, however, uses utterances coded for Information: Reveal: Lack of Knowledge in a more concrete way as this excerpt demonstrates:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Abram</i>	<i>we have another like demo presentation right?</i>	<i>Information: Reveal: Lack of Knowledge</i>
<i>Carrie</i>	<i>well so what happens is we get judged tonight and they choose like I mean it's going down from it'll be like one out of three teams is chosen</i>	<i>Information: Share: Data</i>
<i>Abram</i>	<i>oh okay okay</i>	<i>Action: Align: Acknowledge</i>
<i>Carrie</i>	<i>or something And then those teams will present at the finale but all teams will have tables set up and like product demos</i>	<i>Information: Share: Data</i>
<i>Abram</i>	<i>I see</i>	<i>Action: Align: Acknowledge</i>
<i>Carrie</i>	<i>at the demo day.</i>	<i>Information: Continue</i>
<i>Abram</i>	<i>Yeah</i>	<i>Action: Align: Acknowledge</i>
<i>Carrie</i>	<i>So we have there's an opportunity to talk to judges and people attending we'll need to create some sort of experience but this may be our last presentation unless we make it to the</i>	<i>Meaning: Clarify: Volunteer</i>

	<i>next round</i>	
<i>Abram</i>	<i>Okay</i>	<i>Action: Align: Acknowledge</i>
<i>Yoichi</i>	<i>Mmhmm</i>	<i>Action: Align: Acknowledge</i>
<i>Vera</i>	<i>That's tonight</i>	<i>Information: Reveal: Lack of Knowledge</i>
<i>Carrie</i>	<i>Yeah</i>	<i>Action: Align: Agree/Confirm</i>

Unlike the high-performance Yellow Team that had a meta-awareness of the limitations of their knowledge, the low-performance Green Team does not know the published details about their circumstances (i.e. the contours of the contest). In both teams, however, expressions of lack of knowledge are addressed quickly by a team mate.

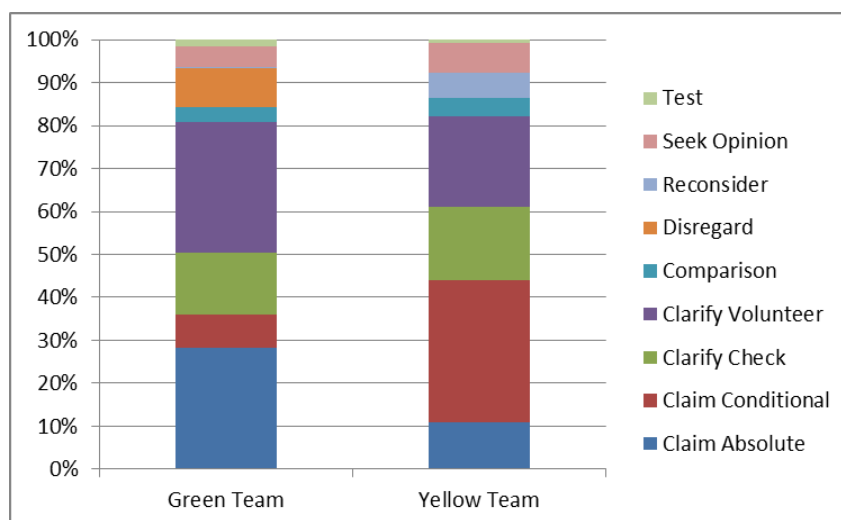
The two teams also have differences in their use of utterances coded for Meaning.

Result 13: Utterances coded for Meaning: Disregard are used exclusively by the low-performance team

Result 14: Use of Claiming language differs in the high- and low-performance teams

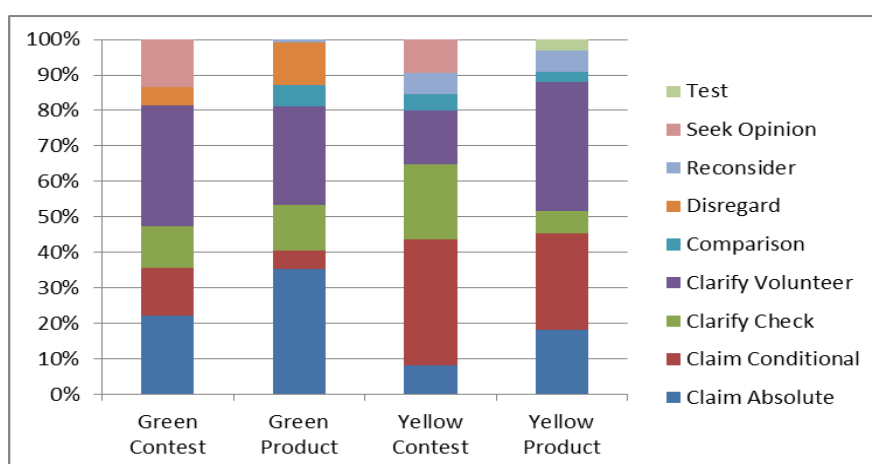
The utterances coded for Meaning reveal two key differences between the studied teams. (See Figures 7.5 and 7.6.) The low-performance Green Team had utterances coded for Meaning: Disregard (n=17) while the high-performance Yellow Team did not. And even though both teams used utterances that were coded for Meaning: Claim: Absolute and Meaning: Claim: Conditional, the low-performance Green Team used Claim: Absolute (28.12%) utterances more frequently than Claim: Conditional (7.81%) ones whereas the high-performance Yellow Team used Claim: Conditional utterances (33.05%) more frequently than Claim: Absolute ones (11.01%). This usage pattern was present in both the Product and Contest Episodes.

Figure 7.5. Total Meaning Utterances by Team



Source: Author

Figure 7.6. Meaning Utterances by Team and Uncertainty Type



Source: Author

Because excerpts highlighting the use of utterances coded for Meaning: Disregard were featured in an earlier section of this document and were used by only one team, they will not be repeated in this section. However, excerpts demonstrating the situated use of utterances coded for Meaning: Claim will be highlighted anew; this time to contrast not Absolute from Conditional sub-forms of the code but to compare the teams' usage of the forms.

When utterances of Meaning: Claim: Absolute in the Product Episodes are considered in close detail, the low- and high-performance teams do tend to use them dif-

ferently. The low-performance Green Team – which uses utterances coded for Meaning: Claim: Absolute more frequently than the high-performance Yellow Team – speaks with an unwavering belief in the completeness and desirability of their prototype product as this excerpt demonstrates:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
Yoichi	<i>Cause I don't think personally I don't think we would be able to you know put the all features that at the time of you know</i>	<i>Meaning: Claim: Conditional</i>
Abram	<i>Yeah</i>	<i>Action: Align: Acknowledge</i>
Yoichi	<i>the start of the operation so first of all I think we in my mind And I'm happy to discuss further but my sense is focus on the re-search side first So that we would we have a better idea</i>	<i>Action: Plan</i>
Carrie	<i>Focus on the what</i>	<i>Information: Seek: Check</i>
Vera	<i>Customer side</i>	<i>Action: Align: Acknowledge</i>
Carrie	<i>Customer side</i>	<i>Action: Align: Acknowledge</i>
Yoichi	<i>Customers you know customer side, publisher side but I would like to emphasize is you know a pathology expert or whatever who might have a greater insight on what sort of you know features would help learning</i>	<i>Meaning: Clarify: Volunteer</i>
Vera	<i>Yeah exactly</i>	<i>Action: Align: Agree/Confirm</i>
Yoichi	<i>Then then you know that will be the start of the actual development of the product</i>	<i>Action: Plan</i>
Carrie	<i>Yeah I hear you. I think that it's tough cause you have to keep both moving</i>	<i>Action: Align: Acknowledge</i>
Vera	<i>Exactly</i>	<i>Action: Align: Agree/Confirm</i>
Carrie	<i>to a certain extent, so what do we need and I guess that's why I ask the bigger question like what is enough like what's the bare min-</i>	<i>Action: Align: Disagree/Contrast</i>

	<i>imum where we feel like we could have something to show people cause I think that would be powerful as we interview</i>	
Abram	<i>I mean I think we already have the bare minimum</i>	Action: Align: Disagree
Carrie	<i>Okay</i>	Action: Align: Acknowledge
Abram	<i>You know it's just yeah you know we already have the bare minimum</i>	Meaning: Claim: Absolute
Carrie	<i>Oh...</i>	Action: Align: Acknowledge

Abram's conviction that their product prototype already embodies the minimum viable requirements is enough to quell the team's questions about the necessary feature set. His absolute statement frames the product prototype with certainty; that the product needs no amendments.

Conversely, the high-performance Yellow Team uses Meaning: Claim: Absolute to express their unwavering belief in the ongoing uncertainty of their situation. In other words, the Yellow Team's Meaning: Claim: Absolute utterances underscore their awareness that their interpretations about the product's definition could be wrong. As this excerpt – the one highlighted in narrative form in the document's general Introduction – reveals:

Speaker	Utterance	Code(s)
Shahrnaz	<i>One thing that one of the early round judges gave in the feedback was that they don't think that we're going to sell that many</i>	Information: Share: Data
Seth	<i>Yeah</i>	Action: Align: Acknowledge
Shahrnaz	<i>um and</i>	Information: Continue
Seth	<i>There's always that</i>	Meaning: Claim: Absolute
Shahrnaz	<i>Right there's always that there's always that risk, ummm but it I think it totally depends on our marketing and</i>	Meaning: Reconsider
Seth	<i>Yeah</i>	Action: Align: Agree/Confirm

Shahrnaz	<i>and and and our go to market strategy, but I just I have a hard time seeing that given like all the like anecdotal and data we have to confirm the market</i>	Meaning: Compare
Seth	<i>yeah I agree um but we'll worry about that later, right</i>	Action: Suspend
Shahrnaz	<i>Yeah agreed, ok</i>	Action: Align: Agree/Confirm

The low- and high-performance teams in this study also use utterances coded for Meaning: Claim: Conditional differently. The low-performance Green Team, which use utterances coded in this way much less frequently than the high-performance Yellow Team, seems to use Meaning: Claim: Conditional as a kind of mitigated speech. By looking again at the most recently highlighted Green Team excerpt, an example of this mitigated use of Meaning: Claim: Conditional can be found in action.

Speaker	Utterance	Code(s)
Yoichi	<i>Cause I don't think personally I don't think we would be able to you know put the all features that at the time of you know</i>	Meaning: Claim: Conditional
Abram	<i>Yeah</i>	Action: Align: Acknowledge
Yoichi	<i>the start of the operation so first of all I think we in my mind And I'm happy to discuss further but my sense is focus on the re-search side first So that we would we have a better idea</i>	Action: Plan
Carrie	<i>Focus on the what</i>	Information: Seek: Check
Vera	<i>Customer side</i>	Action: Align: Acknowledge
Carrie	<i>Customer side</i>	Action: Align: Acknowledge
Yoichi	<i>Customers you know customer side, publisher side but I would like to emphasize is you know a pathology expert or whatever</i>	Meaning: Clarify: Volunteer

	<i>who might have a greater insight on what sort of you know features would help learning</i>	
Vera	<i>Yeah exactly</i>	Action: Align: Agree/Confirm
Yoichi	<i>Then then you know that will be the start of the actual development of the product</i>	Action: Plan
Carrie	<i>Yeah I hear you. I think that it's tough cause you have to keep both moving</i>	Action: Align: Acknowledge
Vera	<i>Exactly</i>	Action: Align: Agree/Confirm
Carrie	<i>to a certain extent, so what do we need and I guess that's why I ask the bigger question like what is enough like what's the bare minimum where we feel like we could have something to show people cause I think that would be powerful as we interview</i>	Action: Align: Disagree/Contrast
Abram	<i>I mean I think we already have the bare minimum</i>	Action: Align: Disagree
Carrie	<i>Okay</i>	Action: Align: Acknowledge
Abram	<i>You know it's just yeah you know we already have the bare minimum</i>	Meaning: Claim: Absolute
Carrie	<i>Oh...</i>	Action: Align: Acknowledge

Yoichi's opening of the topic can be seen to function as a hedge; using flexibility as a way of avoiding an expected disagreement rather than promoting an exploration of a full array of possibilities. Some of Yoichi's phrases – "I don't think," "personally," and "in my mind" for example – can be considered disclaimers that distance him from his assessments and proposals.

The high-performance Yellow Team, in contrast, uses utterances coded for Meaning; Claim: Conditional in a more expansive way as the following excerpt demonstrates:

<i>Speaker</i>	<i>Utterance</i>	<i>Code(s)</i>
<i>Seth</i>	<i>Um okay so we're just gonna be there to have fun</i>	<i>Action: Facilitate</i>
<i>Shahnaz</i>	<i>We're gonna be there we're gonna</i>	<i>Action: Plan</i>
<i>Seth</i>	<i>Run the demo</i>	<i>Action: Plan</i>
<i>Shahnaz</i>	<i>We're doing this. People are probably gonna ask like we'll answer some good questions might get some juices flowing for the presentation to anticipate questions</i>	<i>Meaning: Claim: Conditional</i>
<i>Seth</i>	<i>Yeah I know we're gonna fall asleep with all the other talks</i>	<i>Action: Levity</i>
<i>Shahnaz</i>	<i>Yeah (laughter) totally</i>	<i>Action: Align: Acknowledge</i>

When Shahnaz uses words such as “probably” and “might” she is signaling flexibility in her understanding of the team’s situation. Her use of this utterance coded as Meaning: Claim: Conditional leads to imagined scenarios that she and her teammate collaboratively consider. Moreover, their imagined scenario includes the possibility of collaborative input from unknown others at the event; another dimension of unpredictability and uncertainty that is perceived in a positive light.

Utterances coded for Action also reveal several differences between the conversational profiles of the two teams in this study.

Result 15: Utterances coded for Action: Influence are used only by the low-performance team

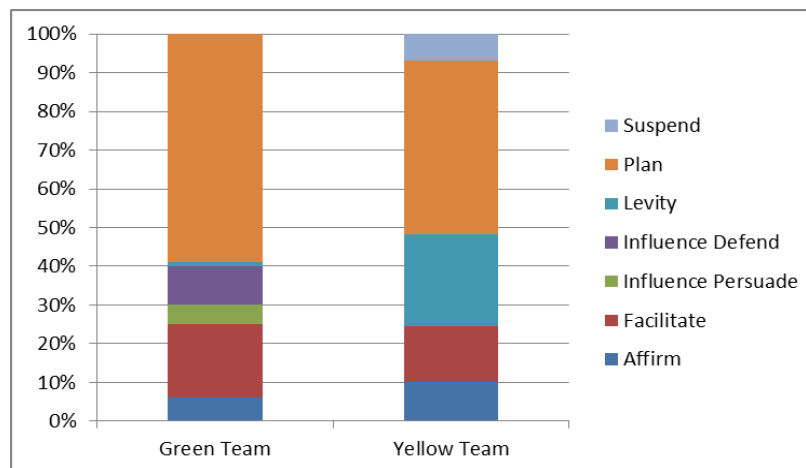
Result 16: Utterances coded for Action: Levity are used more frequently by the high-performance team



### Result 17: Utterances coded for Action: Suspend are used only by the high-performance team

The low-performance Green Team had utterances coded for Action: Influence (n=15) while the high-performance Yellow Team did not. Conversely, the high-performance Yellow Team had utterances coded for Action: Suspend (n=10), but the low-performance Green Team did not. While both teams had utterances that were coded for Action: Levity, the high-performance Yellow Team had 23.80% of their utterances (n=35) associated with this code compared with 1% for the low-performance Green Team (n=1). And as an earlier section of this document stated: all of the utterances coded for Action: Influence occur only within the Product Episodes. Utterances coded for Action: Suspend, too, are predominately found in the Product Episodes. Figures 7.7 and 7.8 highlight these and other features of the two teams' utterances within the Action Aggregate.

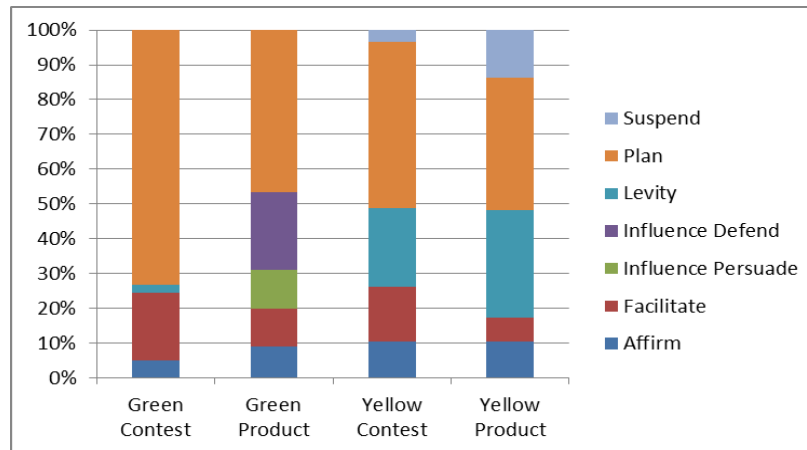
Figure 7.7. Total Action (without Align) Utterances by Team



Source: Author

Because excerpts featuring utterances coded for Action: Influence were examined in detail in the previous chapter, they will not be considered again here. However, utterances coded for Action: Suspend and Action: Levity have yet to be examined in detail. Consequently, they will occupy the focus of this section.

Figure 7.8. Total Action (without Align) Utterances by Team and Uncertainty Type



Source: Author

Utterances coded for Action: Suspend and Action: Levity have been part of but not the focus of several excerpts in previous sections. The two code forms are both present in the following excerpt. When the high-performance Yellow Team is discussing the need to review their assumptions for the financial part of their business plan, Seth suggests that they leave that work for another time.

Speaker	Utterance	Code(s)
Seth	We should start fresh; try and ignore what we	Action: Suspend
Shahrnaz	Yeah	Action: Align: Agree
Seth	know right now	Action: Plan
Shahrnaz	Yeah	Action: Align: Agree
Seth	And then	Action: Plan
Shahrnaz	I totally agree	Action: Align: Agree
Seth	Yeah okay	Action: Align: Acknowledge
Shahrnaz	Yeah	Action: Align: Acknowledge
Seth	That's good	Action: Affirmation
Shahrnaz	We don't have to do that by tomorrow though	Action: Levity, Action: Suspend
Seth	No	Action: Align: Agree

<i>Shahrnaz</i>	<i>(laughter)</i>	<i>Action: Align: Acknowledge</i>
<i>Seth</i>	<i>We don't wanna do that by tomorrow</i>	<i>Action: Levity</i>
<i>Shahrnaz</i>	<i>Yeah</i>	<i>Action: Align: Acknowledge</i>
<i>Seth</i>	<i>Show up tomorrow and be like Yeah we realized last night It's not gonna work... (laughter)</i>	<i>Action: Levity</i>
<i>Shahrnaz</i>	<i>(laughter) Unfurl the flag. Yeah...</i>	<i>Action: Levity</i>

Utterances coded for Action: Suspend are, by their nature, disruptions; a speaker is postponing a discussion or performative act until a future time. The disruption of suspending a discussion or event however is not limited to the timing or sequence of action. As this excerpt reveals, utterances coded for Action: Suspend can disrupt the process of meaning making. By postponing their in-depth look at the venture's financial statements, the high-performance Yellow Team is delaying the possible integration of new cues into their existing frame; they are temporarily holding on to the defining features of their emerging venture while knowing that the data that they are postponing might require them to make fundamental changes to it. In essence, Seth and Shahrnaz are agreeing to sustain a liminal state; to deliberately maintain a state of uncertainty about the ways in which the financials could impact the premise for their venture. Their actions are distinct from denial or avoidance – they are aware of the uncertainties that await them in the review of the financials, and they are intent upon grappling with them. By choosing to suspend a confrontation with the financial data they are allowing a set of uncertainties to linger while they attend to other pressing tasks.

Utterances coded for Action: Levity present another kind of disruption to the interaction. An utterance associated with Levity can move the conversation to an imagined scenario that is disconnected from an expected future situation. When Seth posits that the Yellow Team could attend the demo show and say that their venture is not going to work rather than participate in the persuasive pitching that will be expected of them, he is painting a possible future that borders on the absurd. But because utterances coded for Levity are understood by the participants in the con-

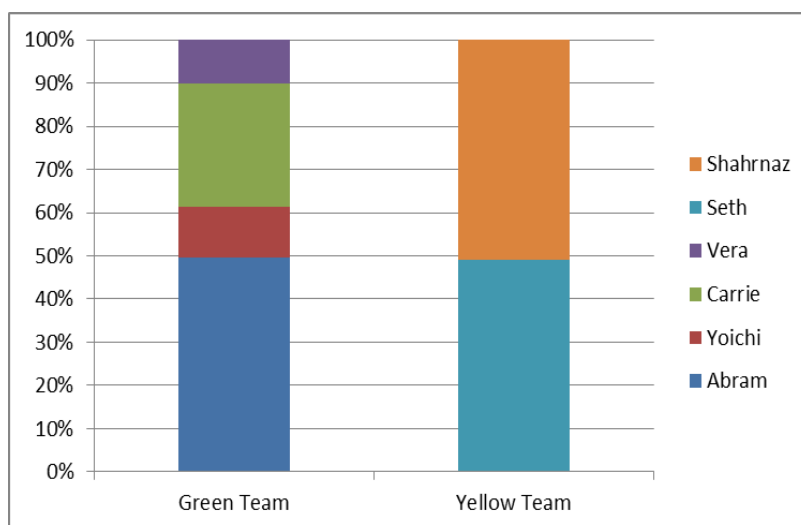
versation to be playful these statements that are disconnected from the team's real actions seem to enhance the shared – and real – work of the team. Utterances coded for Action: Levity are often followed by acknowledging laughter and are often extended over additional turns by the same or both speakers.

#### **Finding Four: Equality of Contributions Differ between the High- and Low-performance Team in this Study**

Result 18: Contributions of words, questions, and language forms are more evenly shared between members of the high-performance team

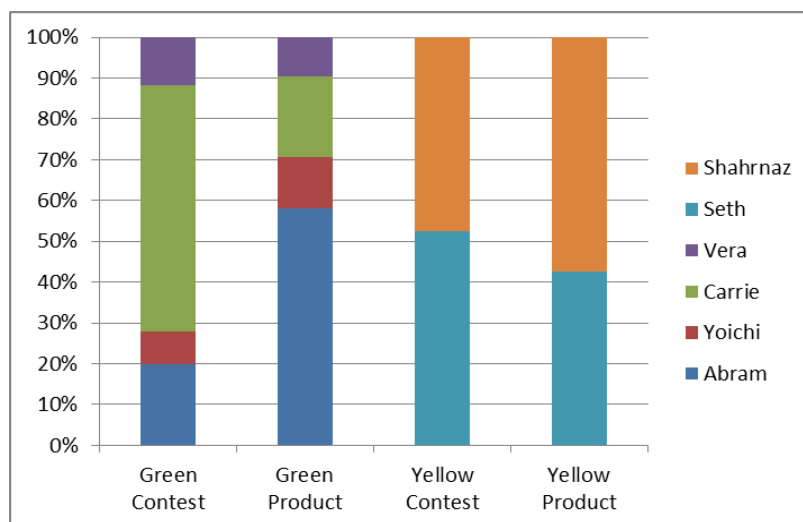
As Figure 7.9 shows, the individual members of low-performance Green Team contributed a very different number of words to their conversations. In contrast, the high-performance Yellow Team's members contributed nearly equal numbers of words to their conversations. The number of utterances by team member is not highlighted in these findings; the two-person team by its nature would be expected to have a very similar number of utterances whereas the four-person team would not.

Figure 7.9. Proportion of Word Count by Team Member



Source: Author

Figure 7.10. Proportion of Word Count by Team Member and Episode Type



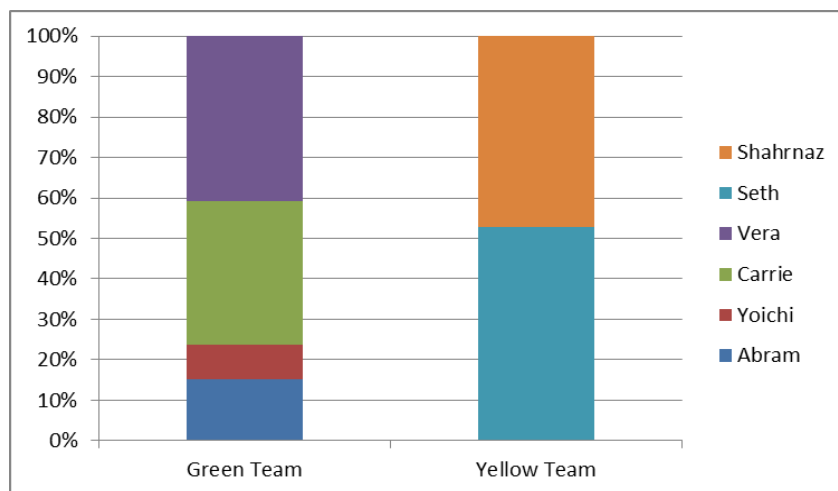
Source: Author

An examination of the individual participation levels within the Contest and Product Episodes also show different patterns between the two teams. (See Figure 7.10.) The high-performance Yellow Team is balanced in terms of individual word contributions in both Episode types; Seth contributes 1,576 words to Shahrnaz's 1,426 words in the Contest Episodes and 638 to her 861 in the Product Episodes. However, less equal levels of participation exist in the low-performance Green Team. In their conversations related to the Contest, Abram contributes 522 words while Carrie contributes 1,592. However, in the conversations related to the Product Abram speaks 5,392 words, and Carrie speaks 1,818. Their team mates, by comparison, speak very little: Yoichi with 211 and 1,172 words and Vera with 309 and 894 words in the Contest and Product Episodes respectively.

Dissimilar patterns between the two teams also were found in terms of their use of utterances coded for direct Questions. (See Figure 7.11.) While the two teams used nearly the same proportion of utterances coded for Questions – approximately 12% for the high-performance Yellow Team and 14% for the low-performance Green Team – the use of these utterances varied at the speaker level of analysis. Utterances coded for Questions were contributed in nearly equal measure by the high-performance Yellow Team. Seth asked 19 questions, and Shahrnaz asked 17.

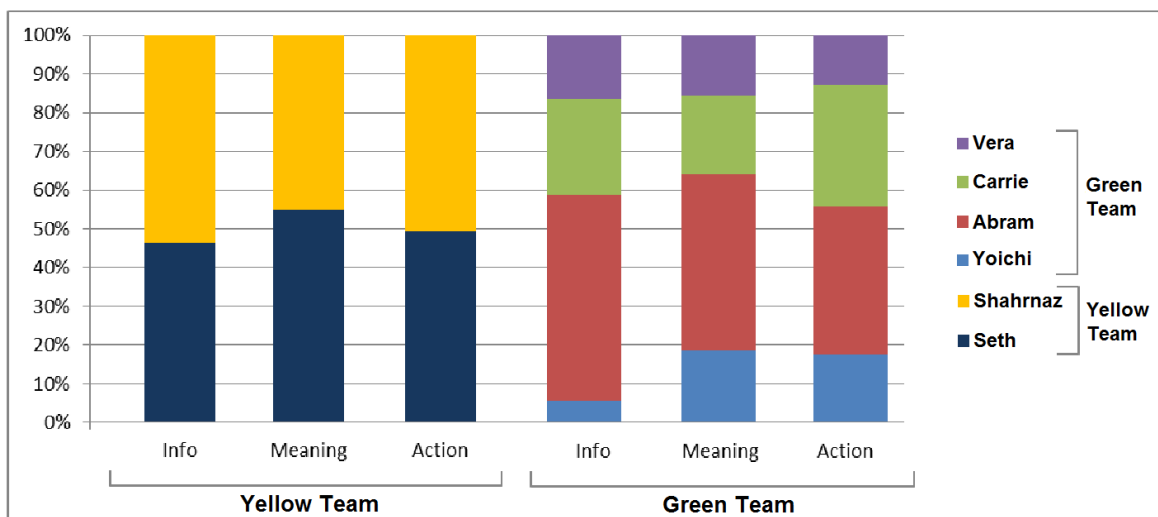
However, utterances coded for Questions were used in an unbalanced manner by the low-performance Green Team, with Abram contributing 9 utterances, Yoichi 5, Carrie 21, and Vera 24.

Figure 7.11. Distribution of Utterances Coded for Direct Questions by Team Member



Source: Author

Figure 7.12. Distribution of Utterances Coded for Information, Meaning, and Action by Teams and Member



Source: Author

Individual team members also tend to play different roles in the collaborative sensemaking of each team. (See Figure 7.12.) In the high-performance Yellow Team, for example, the sensemaking tasks of Information exchange, Meaning ascription, and Action taking are shared almost equally by the two team mates. However, in the low-performance Green Team, the responsibility for Information exchange and Meaning making are mostly assumed by Abram. Action-related tasks also are dominated by Abram but to a lesser extent.

### **Discussion Related to the Third Research Question**

The third question considered by this research— identifying the verbal sensemaking patterns based on team performance level – has generated two findings. In this brief discussion section these two findings will be considered through the lenses of relevant literatures.

The general observation that the low-performance Green Team uses more utterances coded for Information than the high-performance Yellow Team might reveal the teams' learning approaches. The low-performing Green Team's reliance on Information could suggest that they view their work as a technical learning challenge – one that requires more, better, or faster access to information (Heifetz, 1994). A team that would see their work as an adaptive learning challenge, as Heifetz would call it – a challenge that requires a team to know differently rather than know more – might demonstrate less emphasis on Information, which is the case for the high-performance team. The possibility that the high-performance team is approaching their work as an adaptive challenge seems even more likely when the utterances coded for Meaning are unpacked. Even though the usage of utterances coded at the Aggregate level for Meaning seems nearly the same between the two teams, the Primary code patterns of usage are different. The more frequent use of Meaning: Clarify: Check and Information: Reveal: Lack of Knowledge by the high-performance Yellow Team may signal the team's willingness to consider an array

of interpretations of information; their ability to view their work as an adaptive challenge by attending to various ways of understanding their situation.

The high-performance Yellow Team's use of Meaning: Clarify: Check and Information: Reveal: Lack of Knowledge also suggest an ability to maintain a healthy attitude of self-doubt, a sensemaking attribute associated with more resilient teams (Weick, 1993). Conversely, the low-performance team's use of Information: Share: Vision and Action: Influence might suggest a limited ability to maintain such an attitude.

Other traits of resilient teams posited by Weick are heedful relating and virtual role systems. A lack of heedful relating might be captured in the low-performance team's use of Meaning: Disregard or even Action: Influence and by the uneven contributions of words spoken by individual team members. In contrast, the more balanced number of words spoken by the high-performance team might suggest a more heedful interaction. Although balanced word counts among team members are no guarantee of a shared mental model, a team that has balanced participation may be more likely to have a common understanding of the organization, its internal roles, and its environment. Similarly a team such as the Yellow Team that evenly shares the sensemaking responsibilities for Information exchange, Meaning ascription, and Action taking might be prepared to enact a virtual role system better than a team that does not.

The disparity between the teams' use of Meaning: Claim: Absolute and Meaning: Claim: Conditional could offer additional insights into the teams' dispositions. The low-performance Green Team's more frequent use of utterances coded for Meaning: Claim: Absolute over Meaning: Claim: Conditional indicates a fixed way of thinking about the product and its development. The use of these utterance types – along with the low-performance team's exclusive use of utterances coded for Information: Share: Brainstorm, Information: Share: Vision, Action: Disregard, and Action: Influence – suggests an inflexible stance, especially toward the product and its development. By comparison, the high-performance Yellow Team's more fre-



quent use of Meaning: Claim: Conditional over Meaning: Claim: Absolute suggests a more flexible approach. In fact the high-performance Yellow Team's willingness to work in a provisional state of knowing as indicated by their use of Meaning: Claim: Conditional could indicate the team's aptitude for resilience through improvisation and bricolage (Weick, 1993).

The flexibility of the high-performance Yellow Team's approach to their work might be underscored by their use of utterances coded for Action: Levity and Action: Suspend. Utterances of Action: Levity present imagined future states that offer an alternative, if extremely unlikely, path forward. Utterances that move to Action: Suspend hold a topic or course of action in an unresolved state. Choosing to interrupt and return to a matter rather than dispense with it immediately requires an ability to function productively in the near-term while retaining multiple possibilities for the longer-term.

Holding multiple possibilities or perspectives in mind simultaneously might be a precursor for reflective dialogue, and the teams' levels of agility might be related to their capacity for it. To reflect, an individual or a team must be willing and able to reconsider assumptions and try on alternative ways of understanding what they're doing, how they are doing it, and why they are doing it. The low-performance Green Team's relatively inflexible stance may be incompatible with reflective practice; inhibiting their ability to re-conceptualize their minimum viable product based on feedback, for example. Conversely, the high-performance Yellow Team's more flexible stance might enable them to reconsider their assumptions and range of actions more fluidly; might permit them to discard assumptions or product features that have not been confirmed fully.

In short, evidence related to the third Research Question suggests that the use of language differed between the high- and low-performance team in this study. The findings from all three Research Questions will be synthesized and interpreted in the next chapter.

## **CHAPTER EIGHT: GENERAL DISCUSSION**

This chapter explores the major themes that have emerged from this research. One principal theme is that the two studied teams' verbal interactions can be interpreted as a demonstration of collaborative sensemaking. As such, this research provides a rare set of empirical evidence for the Creative Model of entrepreneurial opportunity; for the design thinking aspects of effectuation in action. Three other notable themes include the relationships between levels of success and mindfulness, resilience, and transformative learning through reflection. While these themes were built on the micro-analysis of the data, a cursory consideration of alternative approaches to data analysis and their possible results are described. Each of the aforementioned themes will be unpacked after a review of the four major findings and a brief discussion about the connections between language markers and success that were suggested by this study.

### **Review of the Findings**

This investigation yielded a rich set of eighteen observable results leading to four key findings:

1. These entrepreneurial innovation teams are sensemaking.
2. These teams have a bi-modal approach to sensemaking based on uncertainty type (Product or Contest).
3. The use of flexible (or inflexible) language forms differentiate the high- and low-performance teams in this study.
4. Equality of contributions differentiate the high- and low-performance teams in this study.

These findings and their associated language forms offer insights into the role of intra-team conversations in the work of entrepreneurial innovation teams. Chief among them is the concept of conversational competencies as they relate to entrepreneurial innovation.

## Conversational Competencies

Because some of the workplace interaction studies have emphasized the presence of specific words regardless of context, they cannot be directly compared with the findings from this research project. For example, even though some of the studies of cockpit crews have shown a relationship between the frequent use of the first-person plural (i.e. the word “we”) and team success, this finding has no direct overlap for this context-sensitive investigation. However, other language indicators from the existing workplace interaction literature can be compared with the findings from this research project.

As mentioned earlier in this thesis, researchers (Fischer et al., 2007; J. B. Sexton & Helmreich, 2003) have found that high-performance teams tend to: volunteer information and assistance, offer support and praise for each other, focus discussions on immediate work-related matters, and frame statements in provisional forms. Each of these conversational behaviors can be associated with the codes employed by this project:

- Voluntary contributions of helpful information would have been coded as Meaning: Clarify: Volunteer;
- Open expressions of support would have been coded as Action: Affirmation;
- Orienting suggestions for the meetings would have been coded as Action: Facilitate and Action: Suspend;
- “Discrepancy” framing (e.g. the use of would, could) would have been coded as Meaning: Claim: Conditional.

While the high-performance Yellow Team used proportionally more utterances coded for Action: Affirmation, Action: Facilitate and Action: Suspend, and Meaning: Claim: Conditional as the literature would suggest, the low-performance Green Team used proportionally more utterances coded for Meaning: Clarify: Volunteer. It could be that the high-performance team’s more frequent use of Information: Seek: Check and Information: Reveal: Lack of Knowledge offset the opportunity for

speakers to contribute statements that specifically demonstrated anticipatory help giving. Alternatively, it could be that other conversational dynamics associated with the low-performance team minimized the impact of their ability to offer anticipatory assistance to each other. Or it could be that the type of uncertainty faced by the teams in this study was qualitatively different in a meaningful way from the uncertainty faced by other action teams such as cockpit crews.

While this study's results support the three other noted language markers from the workplace interaction literature, the most pronounced marker, present in the literature and this research, would be the frequent use of utterances coded for Meaning: Claim: Conditional (as opposed to Meaning: Claim: Absolute) by the high-performance Yellow Team. Other notable markers emerging from this research include:

- The high-performance team uses a greater proportion of utterances coded for Action: Levity, Meaning; Reconsider, Information: Reveal: Lack of Knowledge, and Information: Seek: Check;
- The high-performance team exclusively uses utterances coded for Action: Suspend;
- The low-performance team uses a greater proportion of Meaning: Claim: Absolute compared to their use of Meaning: Claim: Conditional and compared to the high-performance team's use of Meaning: Claim: Absolute;
- The low-performance team exclusively uses Information: Share: Brainstorm, Information: Share: Vision, Meaning: Disregard, and Action: Influence.

Beyond the workplace interaction literature, the entrepreneurship literature has posited theory about the verbal questioning behaviors of innovative entrepreneurs. Specifically, the literature has said that highly successful entrepreneurs have a "propensity to frequently ask questions, particularly those that challenge the status quo and ask 'what if' about the future" (Dyer et al., 2008, p. 322). In this study, however, it is the low-performance Green Team that devotes a slightly higher per-

centage of utterances to questions, and none of the questions spoken by either team attempts to challenge conventional wisdom. Rather, the teams in this study use questions to gather or clarify information or to seek opinions. They ask questions in the service of comprehension without disruption.

When considered as a set, the use of utterances associated with all of these codes suggests that entrepreneurial innovation is an act of collaborative sensemaking. The usage patterns also indicate that mindful behaviors, resilience traits, and reflective dialogue seem to be primarily associated with higher-performing, innovative entrepreneurial teams.

### **Entrepreneurial Innovation and the Language of Sensemaking**

Regardless of performance level, the teams studied in this research were actively negotiating the uncertainties of their situations through their conversations. Their observable language revealed that they were sensemaking; they were exchanging information, ascribing meaning, and taking action. Moreover, through their collaborative sensemaking efforts, the teams were co-creating products and markets – what some might call opportunities – with each other and with stakeholders in the ecosystem.

The uncertainties that the teams in this study were grappling with were twofold: their fate in a lean startup competition and the viability of their emerging product. The observable language used by the teams differed based on uncertainty type. The Contest Episodes were mostly oriented toward the use of language coded for Action whereas the Product Episodes were mostly oriented toward the use of language coded for Information, for example. But regardless of the exact details of the language patterns used – and what those usage patterns might mean – the documented patterns are located at the critical nexus between the intra-personal world of the entrepreneur(s) and the impersonal world of economics or a particular industry or market. Consequently, this encapsulation of the teams' observable sense-

making activities presents an opportunity to probe entrepreneurial innovation as a creative process of design (Sarasvathy, 2004b).

To design goals and products well, an entrepreneurial team must make their internal and external worlds “resemble each other in useful ways” (Sarasvathy, 2004b). This, in fact, seems to be the quest of the teams in this study, especially when they are attempting to align product vision with market feedback. As described in Chapter Seven, the two teams tended to have different conversational approaches to such challenges. The low-performance Green Team often employed language forms (e.g. Information: Share: Vision, Information: Share: Brainstorm, Action: Influence, etc.) that inhibited changes to the initial product concept, and the high-performance Yellow Team often used forms (e.g. Action: Suspend, Meaning: Claim: Conditional, etc.) that promoted the possibility of product evolution. In other words, the low-performance team seemed to want the external world to resemble and affirm their internal world whereas the high-performance team seemed willing to alter their internal world to resemble the external world. Although this is only a single comparative case, the results of this study imply that one productive way to pair the inner and outer worlds of entrepreneurial innovation teams could emerge through the use of flexible language forms in intra-team conversations.

In essence, even though the existing effectuation literature indicates that entrepreneurial innovation teams will receive sought-after and unbidden feedback, it doesn't address how teams will grapple with this feedback. It says little about the ways teams process the information and insights that they gather; how they transform disruptions and contingencies into progress. This thesis has offered some observations about the conversational mechanisms that foster entrepreneurial effectuation.

### **Mindful Approaches to Entrepreneurial Innovation and the Language of Conditionality**

Confidence, sometimes over-confidence, is an attribute often associated with entrepreneurial competence (Hayward et al., 2010). Consequently, asserting that the

success of high-performance teams hinges on their use of provisional language forms might seem strange. However, if conditional framing can capture the array of possible meanings that can emerge when working in a dynamic, uncertain context then such framing might be the most accurate – and most success-enabling – way of speaking about an entrepreneurial innovation activity. In other words, teams that use conditional language are not necessarily lacking confidence or decisiveness; their work environment is confusing, and they are communicating their awareness of that fact. People who can maintain a working awareness of "the complexities, nuances, and uncertainties around them are likely to do a better job of navigating through them" (Badaracco, 2002, pp. 48-49).

While conditionality in the true grammatical sense would be restricted to sentences with verb forms such as might and could, utterances coded for Meaning: Claim: Conditional in this study include all expressions that imply multiple possibilities and flexible futures. (Utterances coded for Meaning: Claim: Absolute express more fixed or inflexible ways of knowing.) The comparison of the two teams' use of Meaning: Claim: Conditional and Meaning: Claim: Absolute are almost mirror images of each other: Meaning: Claim: Conditional and Meaning: Claim: Absolute accounted for 33% and 11% of the high-performance Yellow Team's utterances coded for Meaning and 8% and 28% of the low-performance Green Team's. Furthermore, the high-performance Yellow Team occasionally used Meaning: Claim: Absolute to proclaim their fixed belief about the changeable nature of their situation. This particular feature of the studied teams' interactions might indicate an important relationship between ways of knowing and eventual success.

The use of conditional framing suggests a mindful approach to entrepreneurial innovation. Mindful behaviors – actively noticing and interpreting new or disruptive data while maintaining awareness of multiple perspectives and possibilities (Langer, 1989a, 1997) – may be an asset to teams functioning in uncertain environments (Krieger, 2005; Weick et al., 1999; Wilson, 2007) such as entrepreneurship. Researchers have shown specifically that the use of conditional language can

enhance creativity (Langer & Piper, 1987) by helping people maintain an awareness of their imperfect and incomplete knowledge. The use of the conditional may enable people to “concentrate on finding the right ways to eventually get sound, workable answers” while more absolute language might encourage people to continue “hunting confidently for the right answer” (Badaracco, 2002, p. 142).

While Meaning: Claim: Conditional is the most directly connected code to the conditional tense that has been explored in the mindfulness literature, additional codes in this study indicate flexible ways of knowing and may be expressions of mindful behaviors. Utterances coded for Action: Suspend and Action: Levity, for example, both imply a capacity for agility. When using utterances coded for Action: Suspend, a team demonstrates their ability to postpone a conversation that needs deeper consideration than they can afford in the present moment. Suspension also demonstrates their ability to acknowledge and “access their ignorance” (Lambrechts, Bouwen, Grieten, Huybrechts, & Schein, 2011; Schein, 2009, p. 100); to make time to reconsider what they think they know. Moreover, simply being able to have the dual perspectives of the now and the future indicates a mindful stance. Similarly, the use of Action: Levity signals a team’s ability to hold multiple perspectives, albeit an absurd perspective manufactured for the purpose of humor.

These flexible ways of knowing as observed in the teams’ conversations seem aligned with the language associated with design thinking. CA research with product design teams has shown that product features arise, not from explicit proposals, but from assertions about “the way the world *is*”; claims about “what people will think, will know, can accept, will expect, will be frustrated by, or will be aware of” (Matthews & Heinemann, 2012, pp. 665-666). The existing design thinking research does not distinguish between types of claims (conditional or absolute assertions); nor does it explore possible relationships between verbal claim making and team success. However, it does posit that product innovations emerge from claims about the defining characteristics of the market; from team members’ diverse perspectives about the nature of their situation.



In contrast with mindful behaviors that demonstrate a willingness to grapple with multiple perspectives and maintain a continuously interpretive orientation, mindless behaviors are marked by an overuse of existing categories to define experiences and information. When team members are acting mindlessly they are prone to dismiss new information that would disrupt existing frames of explanation. Consequently, they are likely to make premature cognitive commitments; to resist the creation of new categories that could accommodate all of the relevant, if discordant, information that they have (Langer, 1992).

In this study, utterances coded for Meaning: Claim: Absolute indicate fixed ways of understanding; less flexible ways of knowing than would be signaled with Meaning: Claim: Conditional. Other codes that could signal inflexible perspectives include Information: Share: Vision and Action: Influence. These inflexible code types were associated exclusively with the low-performance Green Team. Utterances coded for Information: Share: Vision or Action: Influence impose a language of certainty onto an uncertain situation. These verbal choices may have dulled the low-performance Green Team's awareness of alternative options thereby diminishing their pivoting agility – and their chances for success.

In summary, mindful practices -- demonstrated through verbal expressions of flexibility – may be an asset to entrepreneurial innovation teams. Based on the findings from this research and from the literature, mindfulness may help entrepreneurial innovation teams more accurately describe their situations, envision possible futures, and avoid premature cognitive commitments.

### **Entrepreneurial Innovation teams are Sensemaking – and High-Performance Teams are Resilient**

Like mindfulness, sensemaking is an interpretive process. Teams become aware of sensemaking endeavors in uncertain situations; in circumstances in which environmental cues do not fit into existing frames of meaning and new, sometimes

temporary, meanings must be established (Weick, 1995). Even though sensemaking has been associated with entrepreneurship (Barton, 2010; Cornelissen, 2012) few, if any, previous studies have examined the detailed sensemaking practices of entrepreneurial innovation teams in action.

Because sensemaking is a social process it is, at least in part, a verbal process. To study the observable sensemaking language of entrepreneurial teams at work, this study built a set of nested codes; 26 primary codes including sub-forms derived from a grounded process and 3 aggregate codes imported from literature (Thomas et al., 1993). The three imported sensemaking codes (Information, Meaning, and Action) were able to accommodate the lower-level codes representing the diversity of utterances used by the entrepreneurial innovation teams in this study. This research approach revealed the verbal sensemaking patterns of these entrepreneurial innovation teams at work.

As was reported in Chapter Five, the general pattern of sensemaking language for these teams was comprised of 43% Information, 32% Meaning, and 25% Action utterances. Perhaps more importantly, the patterns of the low- and high-performance teams differed from each other's. The low-ranking team's pattern consisted of 33% Information, 44% Meaning, and 23% Action, and the top-ranking team's pattern consisted of 12% Information, 39% Meaning, and 49% Action. Given the exploratory nature of this research, any conclusions from these patterns must be tentatively drawn. Nevertheless, while the usage patterns for Information and Meaning seem to vary widely, Meaning appears to be a steadily used verbal sensemaking structure. This consistent presence of meaning-making in the conversations of entrepreneurial innovation teams could be evidence of Shane's assertion that "people do not discover opportunities through search [for information], but through recognition of the value of new information they happen to receive through other means" (Sarasvathy, Dew, & Ventresca, 2009, p. 271). If so, the identification of the importance of meaning-making to entrepreneurial innovation teams could redirect scholarly attention away from studies of information availabil-



The resilience trait of virtual role systems is also revealed in conversation. However, unlike the other three traits virtual role systems are not associated with a particular utterance type, but in the balance of the usage of types. Chapter Seven offered these observations about the studied teams:

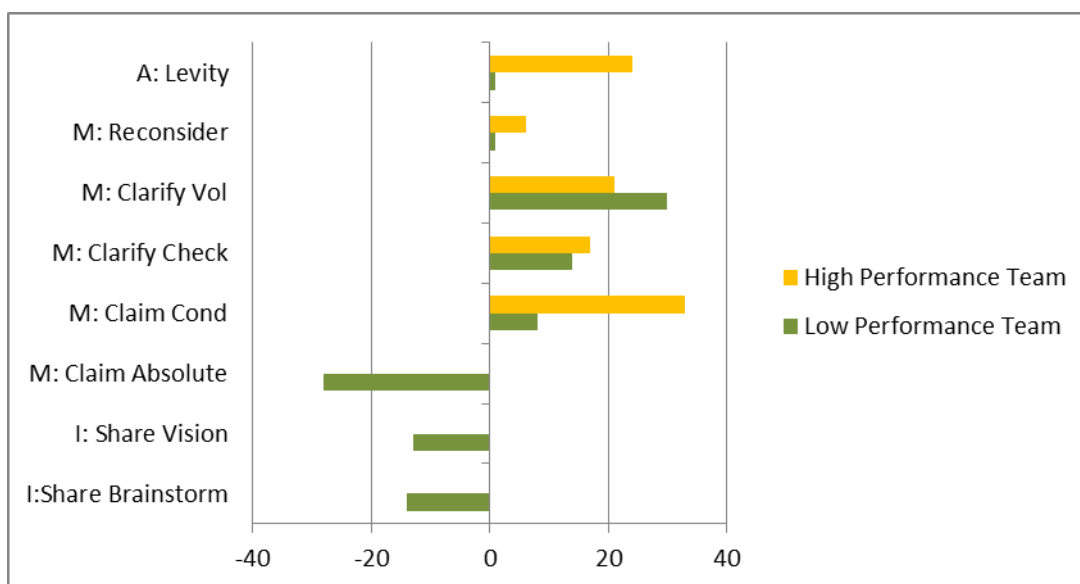
- The high-performance team displays a balanced use of verbal sensemaking registers by all a team members; sensemaking tasks are shared.
- The low-performance team displays an unbalanced use of verbal sensemaking registers by all a team members; sensemaking tasks are owned primarily by one person.

The parity of team member participation suggests the possibility of a more fully developed virtual role system. Moreover, Chapter Seven also reported that the word-counts of the team members in the high-performance team were more balanced than those of the low-performance team. The more balanced participation levels suggest greater team member engagement and might indicate better shared awareness of the roles and responsibilities of the high-performance team as a whole.

When the constellation of resilience-oriented findings based on the literature is considered in conjunction with hallmarks of the language use of the two studied teams, Weick's assertion becomes more solidly supported by this research. (See Figures 8.2, 8.3, 8.4.) The high-performance team's conversations included frequent use of utterances coded in ways associated with the enhancement of resilience in each of the four categories -- Improvisation, Attitudes of Wisdom and Doubt, Heedful Relating, and Virtual Role Systems. They also exclusively used utterances coded for Action: Suspend; a code type connected to support for Heedful Relating. The low-performance team's conversations had different contours. Their interactions included frequent use of utterances coded in ways that could hinder the traits associated with resilience. For example, they exclusively used several

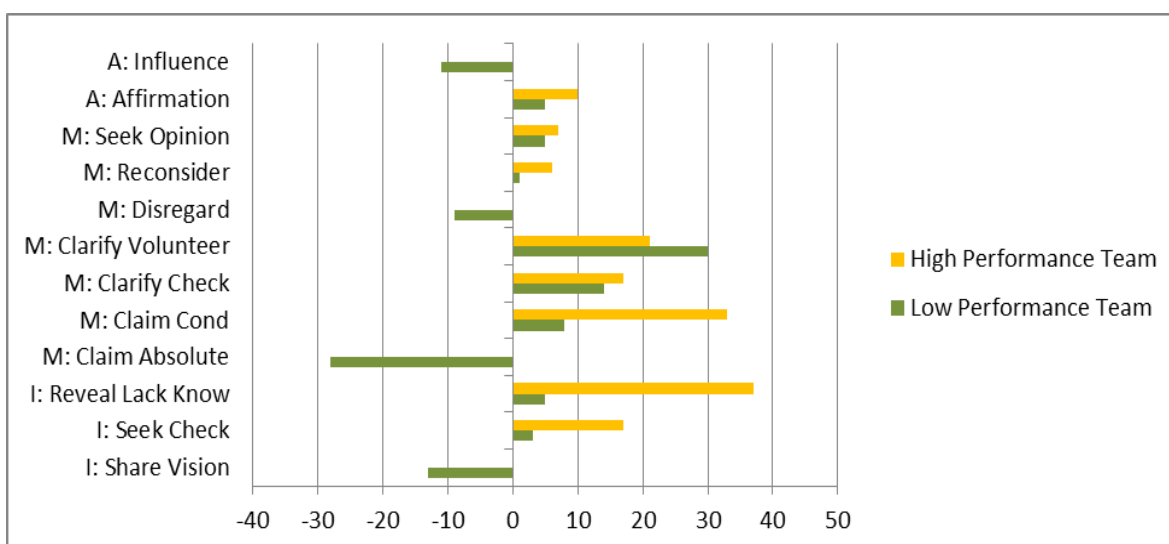
language forms -- Information: Share: Brainstorm, Information: Share: Vision, Meaning: Disregard, and Action: Influence – that seemed to work against their ability to establish behaviors and routines related to Improvisation, Attitudes of Wisdom and Doubt, and Heedful Relating.

Figure 8.2. Positive and Negative Impact of Utterances on Improvisation by Team Usage



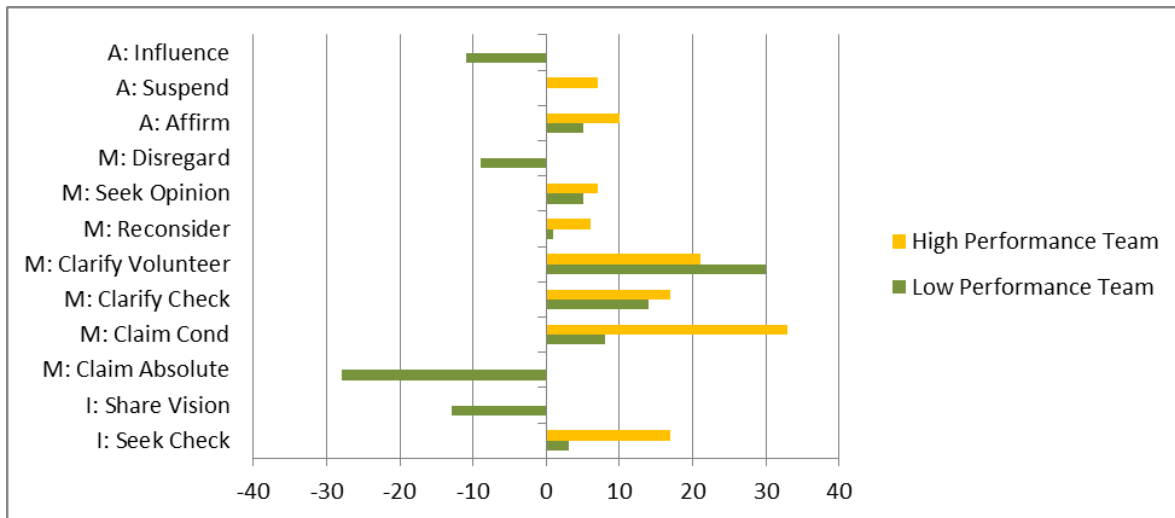
Source: Author

Figure 8.3. Positive and Negative Impact of Utterances on Attitudes of Wisdom and Doubt by Team Usage



Source: Author

Figure 8.4. Positive and Negative Impact of Utterances on Heedful Relating by Team Usage



Source: Author

In short, the observable sensemaking language of the teams in this study supports Weick's concept of resilience and performance. In Weick's model, teams that practice the four traits associated with resilience tend to be more successful. The high performance Yellow Team tended to language forms that could be easily associated with the productive enactment of Weick's four traits whereas the low-performance Green Team tended to use language that may have hindered their ability to actualize the traits of resilience in their entrepreneurial innovation work.

### Entrepreneurial innovation is an Adaptive Learning Challenge Enabled by Reflective Dialogue

The context for this study is a university sponsored lean startup competition. Pedagogically, the competition in general can be understood as an experiential learning platform (Kolb, 1984). Student contestants are expected to learn by doing. That constructivist learning disposition is enhanced by the lean startup orientation of this contest which implies an iterative learning process is embedded in the experiential

activities of the teams. The notion of “validated learning” – an iterative cycle of building a prototype, measuring customer use(s) of the prototype, and adapting the prototype based on insights gained from the experiment with the customer – is a fundamental part of the lean startup approach to entrepreneurial innovation and drives a team’s “pivot or persevere” conversations (Reis, 2011). While those intra-team conversations might begin with data from experiments with customers and conclude with an amended prototype (and eventually version 1.0 of a product), the collaborative process behind this sensemaking transformation – the process that includes information, meaning, and action – has not been well articulated. (In fact, some researchers say that the process issues around entrepreneurship in general remain under-investigated and poorly understood (Moroz & Hindle, 2012).)

Conversations about the viability of an emerging minimum product can be difficult for teams to have (Reis, 2011). They are interpretive conversations that require team members to examine their theories in use; something that is typically very difficult (Argyris, 1976). Such conversations can raise issues about what has happened in their customer experiments, how the team members feel about changing the product, and who the team members would be if their product and venture were to change (Stone, Bruce, & Heen, 1999). They are compressed interactions that require teams to employ the informational, social, and identity functions of language (Cazden, 1988) while figuring out the next steps for their product and venture. Given that these “pivot or persevere” conversations (Reis, 2011) require team members to review the data they have, examine the assumptions they hold, and project plausible scenarios onto their shared futures, these conversations can be considered reflective dialogues (Jacobs & Heracleous, 2005; Schön, 1983).

While no code for reflection was specifically crafted in the analysis of the conversational data from the two teams in this study, some of the codes do lend themselves to describing reflective practice. Codes such as Meaning: Claim: Conditional, Meaning: Reconsider, Meaning: Clarify: Check, Action: Suspend, and Action: Levity, for example, all suggest a speaker’s ability to consider what they are doing

(content), how they are doing it (process), and why they are doing it at all or in a given way (premise) (Mezirow, 2000). Utterances associated with each of these code types tended to be used more frequently by the high-performance Yellow Team in this study. Conversely, utterances coded for Meaning: Claim: Absolute could be considered a less-reflective language form; it was used most frequently by the low-performance Green Team.

Perhaps the high-performance Yellow Team's success is, at least in part, attributable to their reflective practice. If so, it would be consistent with the advice given by the key note speakers at the contest's Finale event. As described in Chapter Four, both Craig Newmark and Paul Sagan emphasized the value of reflection to entrepreneurial success. Their over-lapping messages about the importance of questioning yourself and your assumptions encouraged aspiring entrepreneurs to engage in reflection in their work. It also would be consistent with the premise of experiential learning; "learning by doing" includes learning by thinking about your work (Di Stefano, Gino, Pisano, & Staats, 2014). And it would echo the research on the connection between adaptive reframing and creative teamwork (Hargadon & Bechky, 2006).

By using more language forms related to reflection than the low-performance Green Team, the high-performance Yellow Team might have created conditions that enabled them to engage in transformative learning (Kegan, 2000; Mezirow, 2000). For example, the high-performance Yellow Team's use of utterances coded for Meaning: Claim: Conditional, Meaning: Reconsider, Information: Reveal: Lack of Knowledge, and Information: Seek: Check might help them know their situation differently – at least the team's use of these language forms suggests a willingness to know differently. Conversely, the low-performance Green Team's reliance on utterances coded for Information in general suggests that they were aiming to know more; that they were seeing their challenges as technical ones rather than adaptive ones (Heifetz, 1994). Plus their use of utterances coded for Meaning: Disregard, and Action: Influence suggest that they wanted to affirm rather than trans-



form their existing meanings and assumptions; they sought validation not for changes that would improve the product but for reasons to keep it unchanged.

Two excerpts from the teams' conversations might help illustrate their different approaches to amending their prototypes; to reflecting and pivoting. When the high-performance Yellow Team articulates a gap between their expectations and the feedback from the ecosystem, they are comparing two pieces of conflicting market data. It is Shahnaz who says in an excerpt cited many times in earlier chapters:

*One thing that one of the early round judges gave in the feedback was that they don't think that we're going to sell that many.... but I just I have a hard time seeing that given like all the like anecdotal and data we have to confirm the market...*

In this utterance she is reflecting on two different pieces of feedback and what they might mean for the team's emerging product. She is not dismissing either piece of feedback nor is she directly defending an existing vision. She appears to be expressing her realization that the team might need to invent a new way of understanding their product in order to accommodate these different points of view – or at least that they need more data to inform their emerging interpretation of the data. The low-performance Green Team, however, never seems to hold different pieces of feedback in juxtaposition with each other; they contrast feedback from the ecosystem with their original vision. The following excerpt – an exchange that was not included in the data for micro-analysis because one of the team members had just left the conversation – illustrates this point:

*When referring to their original market segment choice (that of developmentally-challenged children) Carrie proclaims, "It's just too hard... I think the better strategy is to go in the reverse direction." Abram in a voice that sounds disappointed and frustrated concurs, "Yeah... I talked to a couple of other parents with children. And I*

*had this same – similar – conversation. And after our conversation with uh Emma I was just like kinda frustrated because I'm like what what the F...Like why do I keep having this problem..."*

Even though there have been no expressions of validation from the ecosystem indicating that going “in the reverse direction” will improve their chances of success, Carrie (and then Abram) seems to recognize that the team’s initial approach has not worked. She comes to that conclusion, however, because “it is too hard” – the feedback that they have been getting is consistently at odds with the product vision. Abram underscores this reasoning; his interactions with the ecosystem have not produced voices of approval for the product. The Green Team is not comparing divergent perspectives from the ecosystem – in fact the market feedback seems to have been rather consistent. The team is comparing the feedback to their vision.

It may be warranted to note that Shahrnaz is a user innovator (Luthje, Herstatt, & Von Hippel, 2002; Von Hippel, 2005); a likely customer for the team’s emerging product. Because she is part of the team’s target market she may have special knowledge about the needs and preferences of prospective customers. As such, her vision for the product might be fused with the feedback from other prospective customers. Thus her comparison between feedback from the market and from their advisor may be a veiled comparison between her vision and the advisor’s advice. However, neither she nor Seth dismisses the feedback from the advisor or instantly chooses one piece of feedback over the other.

Even if Shahrnaz has a special affinity with prospective customers because of her user-innovator status, the high-performance Yellow Team still appears to be more capable of separating the language of content from the language of identity (Cazden, 1988) in their innovation conversations. The low-performance Green Team, however, seems to have fused the two, or at least to have coupled them more closely. Research in other settings – especially evaluative settings such as classrooms – has shown that individuals are perceived as less capable if they dis-

connect from the language register in use; sharing personal stories in response to a request for content, for example (Cazden, 1988). And as described in Chapter Three's ethnographic portrayal of the Finale event, knowingly (and playfully) breaking the rules of discourse can be interpreted as a sign of competence. These excerpts suggest a possible performance benefit from a user-innovator's ability to clearly separate the content, social, and identity functions of language.

These small excerpts are important for another reason: the meanings the speakers seem to assign to the problem of conflicting feedback reveals something about the theory of entrepreneurship that informs their work. When reflecting on his experiences, Abram seems to define their situation as a problem of his effectiveness; he should be able to inspire prospective customers to desire the product as he envisions it. In his view it seems as if there is a fixed product and a fixed market voice, and there is either a fit or not between the two. Shahrnaz, however, seems to define her team's situation as a puzzle. Perhaps the puzzle can be solved with more information or a different interpretation of information, but she seems to see their challenge as something that is emergent and co-created with input from the relevant stakeholders. It could be said that Abram and the low-performance Green Team might be using more of a causal approach to their work while Shahrnaz and the high-performance Yellow Team might be using more of an effectual one. In other words, the high-performance team seems to be understanding the problem(s) and developing the solution(s) simultaneously; enacting a fundamental concept of design thinking (Dorst & Cross, 2001; Goldschmidt & Rodgers, 2013).

Reflective dialogue and the learning that it precipitates seem to be evident in the coded utterances of the studied teams. Moreover, codes types with greater reflective capacity are found in the high-performance Yellow Team's conversations whereas code types with less reflective capacity are found in the low-performance Green Team's. However, it is important to note that content-informed observations of the teams' interactions are a step beyond the boundaries of this research as it

was designed. They and other alternative means for analyzing the recorded data will be discussed in the next section.

### **Alternative Approaches to Analysis and Interpretation**

The paired approaches of Conversation Analysis and ethnography were selected for this research because they could attend to the verbal, inter-personal, and situated nature of entrepreneurial innovation. However, other methods of analysis could have been applied to the collected data. In particular, the analysis could have emphasized the sentiments expressed by the speakers rather than the structural use of utterances in the context of a conversation, or it could have examined pre-defined language forms instead of using a grounded approach. A cursory exploration of these alternative approaches suggests that the findings might have been similar to those uncovered by the analysis as conducted.

Had the research taken a traditional content analysis approach it would have considered what speakers talked *about* (instead of the situated, structural impact of their statements.) Although the data was not examined closely in this manner, a superficial review of the transcripts with this method in mind reveals a few key excerpts that underscore the aforementioned themes of mindfulness and resilience and their association with the two teams.

The content of the high-performance Yellow Team's conversations includes statements that express the team's willingness to remain in an interpretive stance and to practice mindfulness. When Seth says, "We should start fresh; try and ignore what we know right now..." he is urging the team to notice new things or to create new categories of interpretation when they review their assumptions. And in another instance, Shahrnaz encourages the team to think orthogonally; sharing a plan to talk to companies upstream from their market because "it will be directionally interesting to learn" about their experiences.

The content of the high-performance Yellow Team also is rich in statements that express heedful relating and the presence of a virtual role system – traits associated with resilience and success. When Seth jokes, “that’s *your* job around here...” and goes on to talk playfully about his lack of business savvy, he is saluting Shahrnaz’s expertise and their complementarity. Similarly, when Seth says, “I think that’s a good thing for both of us to work on... I mean that’s more much more up your alley, but I think I can add perspective that’s very different than yours...” he is expressing an appreciation for Shahrnaz’s contributions and is indicating his awareness of their interdependence. He is also offering support of their shared goal. Shahrnaz reciprocates the message of support for the team when she says, “I can let that dream die...” in reference to an idea she once held but now recognizes as unnecessary for the team’s work. This subordination of individual aspiration in favor of shared success is the hallmark of heedful relating.

A cursory review of the low-performance Green Team’s conversations uncovers statements that imply a much less interpretive approach to their work and fewer statements that could be associated with resilience. For example, when Abram is describing a customer conversation he expresses limited curiosity for the interviewee’s impression of his team’s prototype:

*And so we start talking, and you know I’m telling her about the system and stuff, and ‘oh, you know my oldest boy doesn’t like [activities supported by the system]; he reads the encyclopedia and dictionary...’ Blah blah blah blah. And then like we get further into the conversation, and she’s like ‘oh yeah and I used to make them [home-made tools], and they loved them and they still [use] them.’ And I’m just like in my head I’m like are you listening? I’m like what are you talking ab like this is everything I just told you we wanna do, but but for her when she saw it, she didn’t see that... And it’s frustrating because that’s happened to me several times now. And I’m*

*just like what the what am I not saying right or what you know and it's, yeah. I don't know...*

His words suggest that he has little interest in developing a new frame to incorporate both his vision and the feedback from the customer. He is irritated by instead of interested in the gap between his vision and her reaction to it. Even his orientation to customer interactions implies a rigid expectation; that a singular “right” way to say things exists. All of these features found in the content of his language suggest a mindless orientation to the team’s shared work. The same excerpt suggests a limited ability to maintain attitudes of wisdom or doubt; he is somewhat dismissive of the customer’s feedback (“blah blah blah”) and never expresses an overt interest in attempting to understand what she would like in a product.

Had the research hinged on the presence of predefined language forms, it could have looked for pronouns or other word types in the transcripts. Although a thorough examination was not conducted in this manner, a superficial review of the transcripts using text analysis software (LIWC) suggests that the first person plural (e.g. we, our) was used more often by the high-performance team. First person plural language forms comprised 4.73% of the high-performance team’s conversations and 2.49% of the low-performance team’s. This echoes findings about pronouns and performance in the literature (J. B. Sexton & Helmreich, 2003).

Together these themes suggest that there could be conversational competencies associated with the success of entrepreneurial innovation teams. Although conclusions from such a small sample size must be drawn with caution, language that is related to mindfulness, resilience, and reflection seem to be associated with high-performance. Because this study sampled the sensemaking language of entrepreneurial innovations teams in action all of these conversational competencies are related to the teams’ efforts to grapple with uncertainty. The next chapter will build upon these language forms and themes to posit a theory about entrepreneurial stances toward uncertainty.

## **CHAPTER NINE: AN EMERGING THEORY OF ENTREPRENEURIAL STANCES TOWARD UNCERTAINTY**

As the previous chapters have reported, language forms that express mindfulness, resilience, and reflection are associated with the high-performance Yellow Team in this study. These forms of language are united by a questioning of assumptions. Mindfulness is a continual process of (re)drawing categories of definition, resilience is an exercise in conscious reconsideration of circumstances, and reflection is a practice of reinterpreting the content, process, and premise of beliefs and behaviors. This chapter attempts to situate the self-questioning nature of these language forms within the theoretical models that describe entrepreneurial uncertainty, and offers a provisional theory of entrepreneurial stances toward uncertainty as they relate to performance.

The current literature on entrepreneurial uncertainty is dominated by two main ideas -- effectuation and causation (Read et al., 2009; Sarasvathy, 2001; Sarasvathy & Dew, 2005). These theories hinge on concepts of control and prediction, with effectuation focused on controlling the future and causation focused on predicting it. For example, the effectuation-oriented research argues that entrepreneurs acknowledge uncertainties and adapt to them by altering their goals or improvising (Baker & Nelson, 2005; Sarasvathy, 2001). In contrast, research with a causal orientation asserts that entrepreneurs take efforts to reduce uncertainty through information acquisition or planning techniques (Cooper, Folta, & Woo, 1995; Delmar & Shane, 2003; Ozgen & Baron, 2007). While entrepreneurs have been said to use both types of logic in their practical quest to ascend (Sarasvathy, 2008), the results of this research call into question whether the frameworks of prediction and control -- of acknowledgement and reduction -- can adequately describe entrepreneurial stances toward uncertainty. Mindfulness, resilience, and reflection, as found in the high-performance team's conversations, are interpretive language forms that facilitate expansion -- not prediction or control -- of uncertainty. They serve to increase

aspects of an entrepreneurial innovation team's uncertainty rather than to contain it as most current theories posit.

In the literature, the facets of entrepreneurial uncertainty are many. Some researchers refer to the technical uncertainty (the ability to produce a working product for an acceptable price), the market uncertainty (the levels of demand for the product), and the competitive uncertainty (the team's ability to profit from their efforts) (Shane, 2003, p. 205). Others cite, "Knightian uncertainty (the probability distribution and even outcomes are unknown making it impossible to calculate probabilities or expected consequences); goal ambiguity (preferences are neither given nor well organized); and isotropy (it is not clear which elements in the environment to pay attention to and which to ignore)" (Sarasvathy, 2008, p. xi). Lean startup practitioners also have articulated features of entrepreneurial uncertainty: what product do customers want, how much customers will pay for that product, and whether a sustainable venture can be built within those boundaries are all puzzles to be solved (Reis, 2011). While different, these types of uncertainty are united on at least one level: they all are potentially addressed through techniques of reduction, suppression, and acknowledgement (Lipshitz & Strauss, 1997). Evidence for each of these coping techniques can be found in the language forms associated with the studied teams' conversations.

Information processing is considered by many to be a primary means of uncertainty reduction (Galbraith, 1973, 1974). Given that the teams in this study devoted nearly a quarter of the total coded utterances to Information, this research suggests that the teams may have been using information as a means of reducing uncertainty. This seems even more likely when Information-coded utterances in the Episode types are considered. Because the Product Episodes have an undetermined final structure – the minimum viable product is an emergent artifact – and the teams are less familiar with product creation than they are with contest participation, the Product Episodes may embody more uncertainty than the Contest Episodes. Consequently, the teams might rely more on Information-coded utterances in the Product Episodes in an attempt to reduce uncertainty. And they did: the



Product Episodes were comprised of approximately 36% of Information-coded utterances compared to approximately 11% in the Contest Episodes.

The language forms identified in this study also suggest that the teams engaged in the suppression and acknowledgement of uncertainty. The teams suppressed uncertainty through their use of utterances coded for Information: Share: Vision, Meaning: Claim: Absolute, and Action: Influence. And they demonstrated their ability to acknowledge uncertainty by their use of utterances coded for Information: Reveal: Lack of Knowledge, Meaning: Clarify: Check and Volunteer, Meaning: Seek: Opinion, and Meaning: Claim: Conditional. Utterances coded for Meaning: Claim: Conditional, however, can do more than acknowledge uncertainty; they, along with utterances coded for Action: Suspend and Action: Levity, can expand uncertainty.

The use of utterances coded for Meaning: Claim: Conditional, Meaning: Reconsider, Meaning: Clarify; Check, Action: Suspend, and Action: Levity all suggest a speaker's ability to reflect on the content, process, and premise of his or her work; to consider alternative meanings and imagine varied futures. The conversations that emerge from the use of utterances coded in these ways are reflective dialogues that not only acknowledge uncertainty but expand uncertainty at the level of interpretative possibilities.

Reflective dialogue is inherently disruptive. It unsettles assumptions and necessitates the creation of new meanings. The work of reflection is not to exploit knowledge or capitalize on unexpected events as causal or effectual theories of entrepreneurship might propose. Instead, the task of reflection is to (re)interpret what team members think they know and to (re)interpret the meaning(s) of events that are happening (or have happened or might happen).

To accommodate the role of reflective dialogue and its precipitating language forms, perhaps a new theory about entrepreneurial stances toward uncertainty should be drawn; a provisional theory that includes a dimension of expansion in addition to control (reduction), prediction (acknowledgement), or suppression.

While the concept of deliberate and productive stimulation of uncertainty is not new (Jauch & Kenneth, 1986), it has neither been incorporated into the entrepreneurial innovation literature nor anchored in empirical evidence before.

### **Provisional Model for Entrepreneurial Innovation Approaches to Uncertainty**

Based on the findings from this research and from the literature, four primary stances toward uncertainty seem to animate the work of entrepreneurial innovation teams. Would-be entrepreneurial innovation teams can:

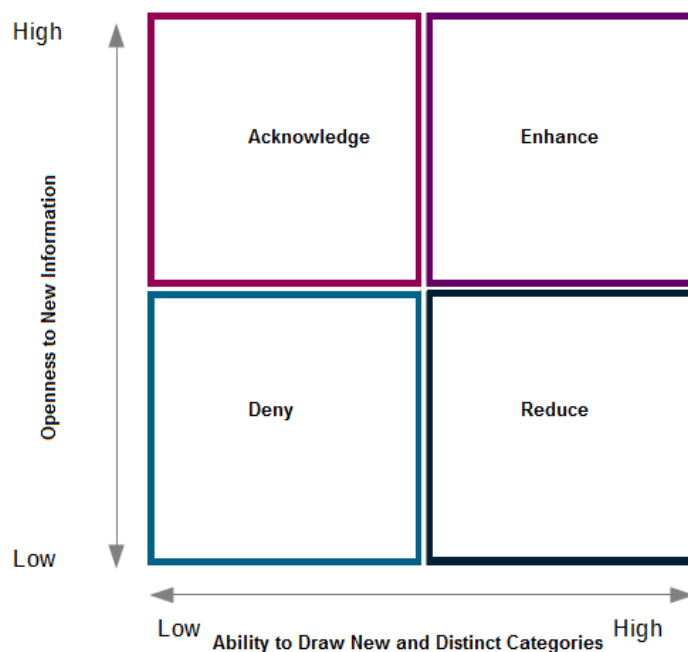
- Acknowledge uncertainty;
- Deny uncertainty;
- Reduce uncertainty;
- Enhance uncertainty.

These stances can be located along two trajectories of mindfulness: the openness for new information and the ability to draw novel categories of distinction (Langer, 1989a). (See Figure 9.1.) Together these attributes describe a team's preferred stance toward uncertainty; a stance that may have an impact on the team's capacity for successful innovation.

Would-be innovators in the Acknowledge segment are willing to recognize changes in the environment and other types of new information, but their limited sensemaking abilities diminish their agility. As a result they may attempt to predict possible paths forward using effectual logic. Would-be innovators in the Deny segment are not open to new information and are not adept at sensemaking. They may be likely to commit early to a feature set for a product and execute along the original plan without revising it to incorporate new information as the innovation process unfolds. Innovators in the Reduce segment limit the amount or type of new information that they will accept, but they are willing to consider new analyses of the data they have. They may be likely to use causal reasoning to solve problems and generate "incremental innovations" – follow-on innovations that make small changes to an existing product (Christensen, 1997). Lastly, innovators in the Enhance segment

have a high tolerance for uncertainty. Like the high-performance team studied by Michel and Wortham (2009), innovative teams in the Enhance segment are able to take in new information, enact a collaborative sensemaking process, and even deliberately expand uncertainty by persistently holding interpretations in a liminal state.

Figure 9.1. Entrepreneurial Approaches to Uncertainty



Source: Author

While a team's innovation process might be represented by any quadrant for a particular moment in time, this segmentation is intended to describe the dominant approach used by a team over time. Similarly, while different members of an innovation team might have personal predilections for different approaches, the segments are meant to describe the dominant approach used by the team as a collective. Based on the findings of this study, entrepreneurial teams that function in the Enhance segment seem poised to create successful innovations and ventures.

The segmentation of entrepreneurial innovation teams along these attributes of mindfulness suggests that the most successful teams are also the most mindful in

their approach to innovation. Existing theory does suggest that mindful practices can lead to greater creativity and agility (Langer, 1992; 2002, pp. 216-217; Langer & Piper, 1987). This study contributes to existing theory by suggesting that mindfulness (as observed through language) can lead to successful and significant entrepreneurial innovations.

Mindfulness, like resilience and reflection, were captured in the language used by the teams in this study as this excerpt from the high-performance Yellow Team demonstrates:

*We should start fresh; try and ignore what we know right now...*

When Seth says these words to his partner Shahrnaz he is requesting a suspension in the team meeting; he's requesting that they postpone a particular conversation until another time. But his language wields a greater impact than that function alone. The act of suspending reveals a kind of mindfulness – flexibility and the avoidance of premature cognitive commitments – about the team's approach to entrepreneurial innovation. Suspension also makes possible a kind of resilience – enabling heedful relating and creating the opportunity for improvisation through reconsideration. By partitioning time to focus on a subject in the future, suspension also signals the speaker's awareness of the potential value of reflection; it promotes the possibility of transformational change through reflective action in the future.

Although some research has associated acts of suspension with reduction of uncertainty (Jauch & Kenneth, 1986), that is not the case with this excerpt. Suspension evokes reduction when teams are postponing decisions until additional information can be acquired for evaluation. However, in the case of the studied team, Seth and Shahrnaz are suspending a particular conversation until they have a time to give the topic their full interpretive attention. Moreover, Seth's words, when considered from a content perspective, are encouraging the team to abandon their current assumptions and build their plan anew. He is advocating the creation of addi-

tional uncertainty – by refraining from premature cognitive commitments and by suggesting a disruptive review of their assumptions – at least for a period of time.

The flexible language forms associated with mindfulness, resilience, and reflection may productively expand uncertainty for an entrepreneurial innovation team by creating a culture of inquiry for their fledgling organization. These language forms express plausibility (rather than precision) and may enable the team members to maintain an inquisitive stance toward their work. It is important to note that the language forms found in these teams' conversations were neither aimed at disrupting conventional wisdom in the market nor structured as formal questions in a grammatical sense, as other research based on interviews with innovative entrepreneurs has suggested (Dyer, Gregersen, & Christensen, 2011).

It is possible that disruptive and formally structured questions might be asked in a different phase of the innovation cycle than was studied. None of this study's recorded data captured the teams' initial ideation conversations, for example; perhaps the status-quo challenging "what if" questions cited by Dyer, Gregerson, and Christensen (2008, 2011) occur primarily within that phase of the innovation process. It is also possible that the entrepreneurs in their study remember participating in an inquisitive culture and report the nature of that experience by describing ambient questions as if they had been posed in actuality. Nevertheless, the flexible language forms as observed in this study seem to support inquisitive attitudes and efforts that ultimately engender entrepreneurial innovation.

The observable language used by the high-performance Yellow Team in this study was marked by frequent use of utterance types associated with mindfulness, resilience, and reflection in general. One of the most disparate patterns of language use that separated the high- and low-performance teams was found in their use of Meaning: Claim utterances – a key language form associated with mindfulness. The high-performance team used Claim; Conditional more than Claim: Absolute, and the low-performance team used Claim: Absolute more than Claim: Conditional. In contrast, the low-performance team used language forms associated with mindlessness – Information: Share: Vision and Action: Influence – exclusively. Based

on these and other language patterns the high-performance Yellow Team would seem to reside in the upper-right quadrant of the aforementioned provisional segmentation, and the low-performance Green Team would seem to reside in the lower-left quadrant. The high-performance team opted to Enhance and expand their levels of uncertainty while the low-performance team chose to Deny some uncertainty.

Drawing together concepts from the entrepreneurship literature and findings from this research project, this chapter has sketched a model for understanding entrepreneurial stances toward uncertainty. This provisional model is anchored upon two concepts from Mindfulness theory – a team’s openness to new information and their ability to draw novel categories of distinction – and posits that entrepreneurial innovation teams may engage in the productive expansion of uncertainty. If this new model is populated with results from the micro-analysis of the verbal sense-making language of the studied teams, the high-performance team fits best within the Expand quadrant and the low-performance team fits best within the Deny quadrant. Connections between entrepreneurial stances toward uncertainty and performance stimulate many lines of inquiry and suggest a variety of potential implications for members of the entrepreneurial ecosystem. The next chapter will unpack several possible future directions for research and practice.

## CHAPTER TEN: FUTURE DIRECTIONS AND CONCLUDING REMARKS

This project has taken an inductive and exploratory approach to understanding conversational competencies in the entrepreneurial innovation process and to integrating those observations into a provisional theory about entrepreneurial stances toward uncertainty. By studying entrepreneurial innovation teams in action, this project has been able to offer new details about entrepreneurial teams and their work. It also raises new questions. This chapter will review the major findings and themes that have emerged from the research. It will outline the empirical, methodological, and theoretical contributions of the work. It will present several limitations of the work. Finally, it will offer possible directions for future research and potential applications for practice in the entrepreneurial ecosystem.

From its inception, this research has been designed to answer three primary questions about entrepreneurial innovation teams:

1. What verbal sensemaking patterns can be observed within team conversations across the arc of a lean startup entrepreneurship competition?
2. What variations in sensemaking language exist when teams focus on different types of uncertainty related to their entrepreneurial quest?
3. Are there differences between the teams' sensemaking language and performance as determined by ranking in the contest?

Through inductive, qualitative inquiry this research has been able to describe language patterns in the intra-team conversations of entrepreneurial innovation teams that demonstrate sensemaking in general as well as sensemaking in the service of product validation and contest participation. The research also has described differences in the observable sensemaking language used by high- and low-performance teams; performance-associated patterns that align with the concepts of mindfulness, resilience, and reflection. By juxtaposing this work with existing theories, this dissertation has proposed a provisional theory about entrepreneurial stances toward uncertainty that incorporates an additional dimension of expansion.

This provisional theory suggests that teams with the capacity to verbally expand uncertainties are the ones most able to innovate successfully and ascend.

### **Restatement of Major Findings and their Meanings**

In response to the first Research Question, the micro-analysis of the naturally-occurring conversations revealed a basic pattern of sensemaking language forms: conversations from both teams combined were comprised of approximately 24% Information, 42% Meaning, and 33% Action (without Align) utterances. At a more granular level, utterances associated with the Aggregate code of Meaning were most often coded for Clarify and Claim – language forms that serve to verify or ensure comprehension between team mates and to assert fixed or flexible perspectives about their shared experiences. Utterances coded for Share: Data and Action: Plan were the most frequently found Primary code types within the two other Aggregate code categories. One noteworthy observation related to the first question is that utterances associated with the primary code Action: Align accounted for most of the teams' utterances – more than any other code type including the Aggregate level codes. This result echoes a well-established feature of conversational behavior: speakers strive for solidarity in social interactions (Clayman, 2002). It also might be an illustration of the “social skills” mentioned in the entrepreneurship literature. (Baron & Markman, 2003, p. 54).

Analysis inspired by the second Research Question showed that the teams' sensemaking language did vary based on uncertainty type. In general, it showed that Contest Episodes were dominated by Action utterances while Product Episodes were by Information utterances. This suggests that conversations about the contest with its known structure might hinge on causal reasoning, whereas those focused on the evolution of a minimum viable product with its unknown outcome might call for more effectual reasoning. This observation could be evidence of entrepreneurs using a bi-modal approach (Sarasvathy, 2008). If so, it would be the first empirical evidence of teams using causal or effectual approaches based on a



situated type of uncertainty. Further support for the possible use of a bi-modal approach comes from the teams' use of Action: Levity in the Contest Episodes and Information: Resource in the Product Episodes. Utterances coded for Action: Levity enabled a speaker to articulate a fictitious version of a team's situation – but the fiction could be understood as ridiculous (and humorous) only because the team members were able to contrast it with an expected, ordinary future scenario through causal reasoning. Utterances coded for Information: Seek: Resource may have enabled teams to control uncertainty by focusing their attention on their available means (Sarasvathy, 2001).

With regard to the third Research Question: language patterns did differ between the high- and low-performance teams. The low-performance team's reliance on utterances coded for Information suggests that they might be responding to their entrepreneurial work as a technical challenge whereas the high-performance team's more frequent use of Meaning: Clarify: Check and Information: Reveal: Lack of Knowledge suggests that they might view their work as an adaptive challenge. The low-performance team's language suggests that they might be less resilient – less attuned to improvisation, attitudes of wisdom and doubt, heedful inter-relating, virtual role systems – than the high-performance team. In general, the high-performance team tended to prefer language forms that signaled flexibility; their use of Action: Levity and Action: Suspend, for example, and especially their use of Meaning: Claim Conditional. The two teams used Meaning: Claim: Conditional and Meaning: Claim: Absolute in dramatically different proportions. The low-performance team's more frequent use of utterances coded for Meaning: Claim: Absolute over Meaning: Claim: Conditional indicated a rigid way of thinking about their work, despite the dynamism of their situation. Their use of this utterance type – along with their exclusive use of utterances coded for Information: Share: Brainstorm, Information: Share: Vision, Action: Disregard, and Action: Influence – suggested that the low-performance team might have had difficulty creating the new frames necessary to accommodate the disruptive cues emerging from the ecosystem. By comparison, the high-performance team's more frequent use of Meaning: Claim: Conditional over Meaning: Claim: Absolute suggested the team's willing-

ness to work in a provisional state of knowing; a flexible approach that might have enhanced their sensemaking ability. The two teams also differed in terms of the equity of team member participation. The members of the high-performance Yellow Team contributed similar numbers of words and shared equally the sensemaking tasks of Information exchange, Meaning ascription, and Action taking. The language profile of the low-performance Green Team was quite different. Their interactions were dominated by one team member; the same person contributed the highest number of words and controlled the sensemaking tasks.

Taken together, these patterns of language use offer a glimpse into each team's stance toward uncertainty. The high-performance team with its frequent use of the flexible language forms associated with mindfulness, resilience, and reflection seemed capable of succeeding even while creating conditions that expanded their uncertainty. Conversely, the low-performance team seemed to brace against the creation of new frames to accommodate disconfirming feedback; they seemed to use language to create conditions that denied uncertainty.

### **Empirical Contribution**

Because of its micro-analysis of naturally-occurring conversations, this research has been able to describe *how* entrepreneurial teams make sense of the uncertainties of their work. While earlier research has argued that sensemaking is included in the work of entrepreneurs, those studies were based on data collected from interviews or questionnaires. This is a rare – and possibly the first – study of entrepreneurial sensemaking in action.

With access to recorded naturally-occurring intra-team conversations, this research has been able to examine how entrepreneurial teams exchange information, resolve puzzles, and essentially talk an innovation into being. By micro-analyzing the verbal interactions of the team members while they work, this research has been able to describe the basic verbal sensemaking patterns used by the studied teams. It also has been able to describe more specific language forms that separate the

high- and low-performance teams in this study. While the exploratory nature of this research means that conclusions must be drawn with caution, the findings do suggest that conversational competencies may be aligned with entrepreneurial innovation team performance.

## **Methodological Contributions**

To study the entrepreneurial innovation teams in action, this research embraced the traditions of the workplace interaction literature and the technique of Conversation Analysis. The on-campus offices dedicated for use by entrepreneurs affiliated with the MIT Trust Center and the Accelerate Contest are workplaces; they are the locations where entrepreneurial teams enact the work of product innovation and venture creation. The same might be said of the proverbial garage or even a virtual setting that enables entrepreneurial innovation teams to do their work. Existing workplace interaction studies in other industries have shown, for example, how the conversations between doctors and patients result in diagnoses and courses of action (e.g. bed rest, surgery, etc.). By situating entrepreneurial interactions within the growing body of workplace interaction literature, this research opens new ways of exploring entrepreneurship. It forges a path for the detailed study of the routine language – not pitches or presentations – of entrepreneurial innovation teams *being* entrepreneurial innovation teams. It illustrates the “interactional competencies... requisite to participation” (Psathas, 1990b, p. 21) in the profession of entrepreneurship.

The workplace interaction literature, of course, is built upon Conversation Analysis. While CA has been used to investigate team interactions in corporate (Donnellon, 1996), legal (Atkinsen & Drew, 1979), educational (Cazden, 1988), and aviation (Dietrich & von Meltzer, 2003; Nevile, 2004a) settings, only rarely, if ever, has it been used to study entrepreneurial innovation teams. CA can reveal important dimensions of team communication. It can identify, for example, the conversational forms that separate cockpit crews that are likely to land safely and those that are

likely to crash when facing similar human errors and technical malfunctions. By importing CA into studies of entrepreneurship, this research expands the boundaries of inquiry for the field; it allows theories about entrepreneurial success to include a detailed realm of interpersonal interaction and specific verbal behavior.

If CA can contribute a valuable means of investigating entrepreneurship, one might wonder why it hasn't been used more frequently. One explanation may be because of the difficulty of obtaining the necessary data; the naturally-occurring conversations of entrepreneurial teams engaged in the act of innovating. For this research, subjects were asked to record themselves with devices loaned to them. This choice enabled multiple teams to be recorded at once. Without this technological advantage, it would have been difficult if not impossible to do the comparison of teams – and, by extension, build exploratory theory related to performance. The wearable technology also removed the potential disruption of a researcher's presence while the teams were at work. The recording device may be its own disruptive force but perhaps less so than the presence of the researcher. Nevertheless, the novel use of the wearable recording devices in the data collection process adds a technological component of originality to this research.

## **Theoretical Contributions**

Although the Creative Model of entrepreneurship sees founders as active agents (Alvarez & Barney, 2007; Baker & Nelson, 2005; Baron, 2007) who use sensemaking (Barton, 2010; Cornelissen & Clarke, 2010; Hill & Levenhagen, 1995; Wood & McKinley, 2010) and conversations (Amason et al., 2006; Baron & Markman, 2000; Dyer et al., 2008; Felin & Zenger, 2009; Lechler, 2001) in their work, it fails to explain *how* an entrepreneurial team negotiates the uncertainties of their shared situation; how the team members verbally make sense of disruptive input about their original product concept and collaboratively craft a minimum viable product. This research probed the details of the sensemaking language of entrepreneurial innovation teams in action, and its findings lend richness to effectuation theory. According to this study, entrepreneurial innovation teams facing vari-

ous types of uncertainty seem to rely on utterances coded for Meaning (the breakdown again was approximately 24% Information, 42% Meaning, and 33% Action) and especially on utterances coded Meaning: Clarify and Meaning: Claim to enact their work.

The findings from this research also lend possible support to the claim that entrepreneurs use both effectual and causal approaches in their work (Sarasvathy, 2008). Because the language used in the Contest Episodes was mostly Action-oriented, the teams seem to have been using causation to optimize their work; they knew the structure of the contest and could attempt to predict the best way to reach the desired end-state. In contrast, because the language used in the Product Episodes was mostly Information-oriented the teams might have been using effectual reasoning; the evolution of a minimum viable product with its unpredictable outcome required them to focus on resources and means. This implies not only that entrepreneurs use both causation and effectuation, but that their situated use of these approaches is informed by the type of uncertainty they are facing.

The most noteworthy theoretical contribution made by this research, however, is its sketch of a provisional theory of entrepreneurial stances toward uncertainty; a theory that links the existing theories of effectuation and causation. Forged from the bottom-up examination of observable language, the new theory posits that flexible, interpretive, and reflective language forms expand the uncertainty that entrepreneurial innovation teams face – and that the deliberate expansion of uncertainty might be beneficial to the success of the teams. By adding expansion to the expected categories of reduction (control), acknowledge (prediction), and suppression (denial), the provisional theory lays the foundation for a new way of thinking about entrepreneurs' relationship(s) with uncertainty.

Lastly, this research can be considered a bridge that connects entrepreneurship theories espoused by practitioners with those developed by scholars. The context for this research was a lean startup contest, and the scholarly lens of sensemaking was used to study the competing teams in action. This research has shown that lean startup activities, at least in part, can be considered sensemaking activities.

The sensemaking language used by the teams connects lean startup practices with the scholarly concepts of mindfulness (Langer, 1989a) and resilience (Weick, 1993). Moreover the research suggests possible links that could connect effectuation theory and lean startup philosophy with design.

### **Limitations of the Research**

This research has attempted to provide a rich description of the observable sensemaking language of entrepreneurial innovation teams at work. It does, however, have limitations. For example, this research may have a US-based orientation. Entrepreneurship might be perceived as less admirable in other cultures, and such an alteration in the status of the work might impact the team interactions. Similarly, features of discourse such as heedfulness might be expressed very differently in other cultures. Beyond cultural limitations there are also meeting style limitations. This research focused only on in-person interactions. Teams probably use video conferencing technologies or telephone conferencing abilities in the course of the innovation process. If conversational patterns are influenced by those mediating technologies then this research would have missed those variations. Similarly teams probably do some of their work in smaller sub-teams, and this research would have missed those conversational variations as well. All of these could be worthy of future investigation.

### **Future Directions for Entrepreneurial Innovation Research**

Although this research has added to our understanding of entrepreneurship, it also has raised additional questions. Future work should aim to test and refine the provisional models put forth here and to explore further the antecedent dispositions (related to mindfulness, resilience, and reflection) that were expressed in the studied teams' language.

To refine the model of conversational competences, additional analysis on the language used by entrepreneurial innovation teams in action must occur. Questions of interest include:

- Are these same language patterns found in high- and low-performance entrepreneurial innovation teams outside of high-tech?
- Do language patterns vary based on the stages of the entrepreneurial innovation process?
- Are language patterns related to team composition – namely the dyad compared to larger teams?
- Do language patterns differ when teams are striving for an incremental versus a disruptive innovation?

By investigating these questions, anomalies in the provisional theory of conversational competencies proposed by this research will be found, allowing for a better descriptive model and, potentially, a normative model to be articulated eventually.

The provisional model about entrepreneurial stances toward uncertainty also must be refined through additional inquiry. This research suggests that the deliberate expansion of uncertainty might be beneficial to entrepreneurial performance. Studies that investigate whether this behavior is found in other successful entrepreneurial teams – in general, at specific times in the innovation process, or in response to particular kinds of uncertainty, for example – will be vital to the development of this theory. Future research in this vein might intersect with long-standing topics in entrepreneurship research such as risk-taking (Knight, 1921; Miller, 2007), or it might involve newer domains. It might consider, for example, how the psychology of optimal experience (which describes individuals who add complexity to their tasks to increase enjoyment) (Csikszentmihalyi, 1990) might relate to optimal entrepreneurial performance.

Antecedents to the models presented in this research also need additional analysis. The concepts of mindfulness, resilience, and reflection were expressed in the language patterns of the studied teams and are central to the provisional model of

entrepreneurial stances toward uncertainty. However, this research has offered little insight into the individual motivations or organizational conditions that foster mindful, resilient, or reflective practices and dispositions. A trait at the individual level which is related to mindfulness, resilience, and reflection might be “situated humility” (Barton & Sutcliffe, 2010). Future research could study the presence or form of humility in entrepreneurship; perhaps through content analysis of founder presentations such as those distributed by Stanford’s Entrepreneurship Corner website (Stanford, 2014). Or, to study situated humility in action, perhaps future research could undertake a study such as this one with the specific intent of analyzing aspects of humility – recognition of self-limitations, appreciation of the contributions of others, willingness to learn, and low level of focus on the self (B. Owens, 2009) – that are present in the teams’ interactions over time. Such research could lend richness to the traditional inquiries into entrepreneurial confidence (Busenitz & Barney, 1997; Hayward et al., 2006).

## **Practical Applications**

The findings from this research have advanced the idea of entrepreneurship as a conversational accomplishment. Several specific language forms that appear to be associated with performance levels for entrepreneurial innovation teams have been presented in the previous chapters. Given that language forms can be taught, courses on conversational competencies might be a beneficial addition to the entrepreneurship curriculum. Moreover, educational experiences for entrepreneurs, such as contests and advisory relationships, might be made more effective by overtly incorporating reflective practice into their structures.

While conventional wisdom about entrepreneurship underscores the importance of a good team, the definition of such a team tends to be static – team members should have entrepreneurial experience and complementary areas of expertise, for example. Little, if any, emphasis is given to the dynamic, behavioral dimensions of a good team; behaviors that can be developed. Existing research has shown that



communications training produces improved outcomes in other workplace settings (Salas, Burke, Bowers, & Wilson, 2001; Siegel & Federman, 1973). Similarly, scholars have argued that social skills (which imply and include verbal communications) can be taught, and “entrepreneurs who take advantage of such opportunities may reap important benefits” (Baron & Markman, 2000). Consequently, perhaps the conversational competencies suggested by this research could be taught to aspiring entrepreneurs – and improve levels of entrepreneurial success.

Some communications courses already exist in the formal curriculum at the university from which this study’s data came, but the learning objectives tend to be limited to managerial tasks; how to give feedback or give presentations, for example. Similarly, informal learning opportunities in communications for aspiring entrepreneurs at this university exist, but they tend to emphasize how to pitch or how to write a business plan. To enhance the existing educational offerings with insights and exercises related to conversational competencies may be an easy addition – either as a stand-alone course or an inserted module.

Similarly, experiential educational opportunities – such as the lean startup contest that was the context for this research – could incorporate language-oriented training into their goals. The chief task of teams engaged in lean startup learning cycles is to productively reflect on the discontinuities between their vision and the feedback from the ecosystem; to make new frames of meaning that accommodate feedback and adapt the product accordingly. By making students overtly aware of the role and process of reflective dialogue in the entrepreneurial quest, the contest potentially could improve the innovation outcomes for the teams. A training session on conversational competencies including reflective dialogue early in the contest might prepare teams to constructively manage discordant information and avoid premature cognitive commitments. If advisors also were informed about the reflective process then they could help teams live with the discomfort of sensemaking (Taylor, 2007). Rather than simply offering an, albeit informed, opinion; they could help the teams extend the interpretive process while continuing to make progress.

## **Closing Comments**

As stated in Chapter One, starting a venture is hard. It is difficult, in part, because of the uncertainties that innovative entrepreneurial teams must face. While previous research has focused on the advantages provided to entrepreneurs who strive to predict or control uncertainties, this research has suggested that some entrepreneurial teams may benefit from the deliberate expansion of uncertainties through the use of flexible forms of language. This research has cited several language forms – the use of conditional claims, suspensions, and levity – that enable teams to reflect on the content, process, and premise of their work; to consider alternative meanings, imagine varied futures, and protract the interpretive process. Because the language forms associated with the high- and low-performance team in this study were quite distinct, the findings suggest that conversational competencies are related to innovative entrepreneurial team success. This research suggests that entrepreneurship is a conversational accomplishment.

## APPENDICES

### Appendix One: Code Book

Aggregate	Primary	Sub-forms	Description	Examples
<b>Info</b>				
	Seek	Check	asking for a repeat (info just said or long ago)	<i>What's the term again?</i>
		Data	ask for market data, advisor feedback, or class info	<i>Didn't they just change the law on that?</i>
		Personal	ask about personal wellbeing or situation	<i>Are you okay?</i>
		Resource	ask for info about resources available; esp money	<i>What would be the barriers the timeline in that scenario</i>
	Share	Brainstorm	product ideas not connected to market data	<i>You could give different endings to the stories so for instance sad, happy</i>
		Correct	correcting someone based on data, vision, or intuition	<i>That's an assumption, though, that a vc's experienced</i>
		Data	provide info from customers, advisors, or classes or teachers	<i>The thing that one of the judges gave in the feedback was that they don't think that we're going to sell that many.</i>
		Numbers/Slides	Provide info from team's spread sheet or slide deck (a "fact" they constructed)	<i>These are your paid subscribers</i>
		Personal	sharing about self; hungry, ill, social status	<i>... which is good for me if I need a job</i>
		Vision	describe vision for product / venture; theory behind product / venture	<i>So it's like fluency in understanding how to work with digital media</i>
	Reveal	Lack of knowledge	Disclosures of lack of knowledge	<i>Who are we splitting it with?</i>
		Feelings	emotions, apologies, admit mistakes	<i>That would be awesome!</i>
<b>Meaning</b>				
	Claim	Conditional	asserting theories with wiggle room; often = could, might, think	<i>If-- assuming we can make it -- we'll be able to patent it</i>
		Absolute	asserting theories without wiggle room	<i>Is, must</i>

	Clarify	Check	checking interpretation or meaning	<i>'a thing of water' meaning like a water bottle?</i>
		Volunteer	adding an explanation (to ensure someone understands)	<i>[Are there anything any other things we should be shooting for...] like goals</i>
	Compare	Experiences	comparing current situation with previous one(s) experienced or known; with expectations	<i>Yeah it's like not a trade show</i>
		Data/Input	comparing conflicting data outright; comparing conflicting sets of advice	<i>I have a hard time seeing that given like all the anecdotal and data we have to confirm the market</i>
		Products	Comparing your product with competitor's	<i>What they showed is like incredibly simple, right?</i>
	Disregard / Know best		asserting belief of superior knowledge	<i>And I'm just like in my head I'm like are you listening?</i>
	Reconsider		self-reflective reconsiderations; change of mind	<i>Oh you know what?</i>
	Seek opinion		request someone's point of view	<i>Does it seem a little too kitchy?</i>
	Test / Challenge		ask for additional evidence	<i>You do [think it's feasible]?</i>
<b>Action</b>				
	Affirmation		positive things about another's contribution	<i>I loved you for that!</i>
	Alignment	Agreement / Confirmation	agreement with aforementioned proposal or assessment; confirmation of recent statement	<i>I think that's totally the right thing We did.</i>
		Disagreement	giving different perspective -- data- or vision-based; includes alternative proposal of action	<i>can be direct no or more nuanced</i>
		Acknowledgement	indication of attention or comprehension; belonging	<i>Ok, yeah, thanks, mmhm</i>
	Facilitate		keeping meeting on topic	<i>Okay; we were thinking through everything...</i>
	Levity		jokes and laughter	<i>This pen only works if you have money!</i>
	Influence	Persuade / impress	efforts to change someone's interpretation or to contain alternatives	<i>Log in a play with it a little bit see where it's at right now</i>

		Resist / defend	statements that justify behavior or status of project	<i>And I mean the thing is too is like it's not it's not done and there's a tons of stuff to do</i>
	Plan	Coordinate	organizing future actions generally	<i>What are our goals for the demo?</i>
		Propose	organizing future actions (even near term) specifically	<i>The day we come back when we do meet up; We could spend the 1st meeting largely on the customer.</i>
	Suspend		suggest a preference / need to postpone action	<i>Not not today necessarily!</i>

## Appendix Two: Jeffersonian Notation Chart

Jeffersonian Transcription Notation (Jefferson, 1984, 2004) includes markings such as:

Symbol	Name	Indication
[ text ]	Brackets	The start and end points of overlapping speech
=	Equal Sign	The break and then continuation of a single utterance
(# of seconds)	Timed Pause	A number within parentheses indicates seconds consumed by a pause in speech
(.)	Micropause	A brief pause, usually less than 0.2 seconds
. or ↓	Period or Down Arrow	Falling pitch or intonation
? or ↑	Question Mark or Up Arrow	Rising pitch or intonation
,	Comma	A temporary rise or fall in intonation
-	Hyphen	An abrupt halt or interruption in utterance
>text<	Greater than / Less than symbols	The speech within the marks was delivered more rapidly than usual for the speaker
<text>	Less than / Greater than symbols	The speech within the marks was delivered more slowly than usual for the speaker
°	Degree symbol	Whisper, reduced volume, or quieter speech
ALL CAPS	Capitalized text	Shouted or increased volume of speech
underline	Underlined text	The speaker is emphasizing or stressing the speech
:::	Colon(s)	The prolongation of a sound
(hhh)		Audible exhalation
· or (.hhh)	High Dot	Audible inhalation
( text )	Parentheses	Speech which is garbled, unclear, or in doubt
(( <i>italic text</i> ))	Double Parentheses plus italics	Annotation of non-verbal activity

### Appendix Three: Recent MIT \$100K Winners and their Trajectories

This table presents the MIT \$100K Competition's winning teams and highlights of their latter fundraising success. Prior to 2006 the competition had smaller prize incentives and was called the \$50K and, originally, the \$10K. (MIT, 2014.)

Year	Winning Team	Partial List of Critical Events	Sources
2013	3DIM	\$50K from Mass Challenge	<a href="http://www.crunchbase.com/organization/3dim">http://www.crunchbase.com/organization/3dim</a>
2012	Cloudtop	\$1.8 Million from Andreessen Horowitz and Highland Capital Partners, and SV Angels	<a href="http://www.crunchbase.com/organization/cloudtop">http://www.crunchbase.com/organization/cloudtop</a>
2011	Sanergy	Funding has included \$100K from MassChallenge, and \$1.5 Million from USAID.	<a href="http://saner.gy/archives/2544">http:// http://saner.gy/archives/2544</a> <a href="https://twitter.com/Sanergy/status/128637229584236544">https://twitter.com/Sanergy/status/128637229584236544</a>
2010	C-Crete	\$225K NSF Grant among others for undisclosed amounts	<a href="http://www.nsf.gov/awardsearch/showAward?AWD_ID=1346506">http://www.nsf.gov/awardsearch/showAward?AWD_ID=1346506</a>
2009	Ksplice	Bought by Oracle for undisclosed sum	<a href="http://www.oracle.com/us/corporate/acquisitions/ksplice/index.html">http://www.oracle.com/us/corporate/acquisitions/ksplice/index.html</a>
2008	Diagnostics for All	Awarded \$1.2 Million and \$2.6 Million grants from Bill & Melinda Gates Foundation	<a href="http://www.dfa.org/dfa-in-the-news/press-releases.php">http://www.dfa.org/dfa-in-the-news/press-releases.php</a>
2007	Robopsy	Awarded \$40K from MTTC, \$100K from CIMIT, at least \$80K in additional grants from other sources	<a href="https://www.cimit.org/news/robopsy.html">https://www.cimit.org/news/robopsy.html</a>
2006	Semprus BioSciences (formerly SteriCoat)	Raised \$28.5 million in venture capital financing and \$2.4 million in federal funding	<a href="http://newsoffice.mit.edu/2013/semprus-biosciences-1010">http://newsoffice.mit.edu/2013/semprus-biosciences-1010</a>

## Appendix Four: Ethical Approval Form

### **University of Exeter Business School** **Ethical Approval Form: Research Students**

This form is to be completed by the research student. When completing the form be mindful that the purpose of the document is to clearly explain the **ethical considerations** of the research being undertaken.

Once completed, please submit the form **electronically and a signed hard copy** to Helen Bell at [H.E.Bell@exeter.ac.uk](mailto:H.E.Bell@exeter.ac.uk). A copy of your approved Research Ethics Application Form together with accompanying documentation **must be bound into your PhD thesis**.

#### **Part A: Background**

Student name	<b>Betsy Campbell</b>		
Supervisors names	<b>Andi Smart and Anne O'Brian</b>		
Title of thesis	<b>Language use in early-stage entrepreneurial team conversations</b>		
Date of entry	<b>October 2011</b>	Status	<b>FT/PT/Continuation</b>
Start and estimated end date of the research	<b>December 2012 – January 2014</b>		
Aims and objectives of the research	<b>Aim:</b> To analyse the language patterns of early-stage entrepreneurial innovation teams <b>Objectives:</b> <ul style="list-style-type: none"> <li>- Develop communication codes to represent the conversations of entrepreneurial team members involved in a university-sponsored competition</li> <li>- Examine the language patterns within and across a small set of teams</li> <li>- Identify differences, if any, between the language patterns of higher-performing and lower-performing teams</li> </ul>		
Please indicate any sources of funding for the research	<b>None/self</b>		

#### **Part B: Ethical Considerations**

Describe the methodology that will be applied in the project (no more than 250 words)	<p>The project will examine recorded conversations of several entrepreneurial teams as they participate in a competition. The lead member from each participating team will receive a recording device and a hard disk; they will be asked to record team conversations during the competition and store them on the disk. At the end of the competition's activities, the participants may keep the recording device and must return the disk and data to the researcher.</p> <p>Conversation Analysis will be used to attend to the details of language patterns within and across teams. The data will be analysed according to Strauss and Corbin's (1990) Grounded Theory. Codes will be built bottom-up from the recorded data; higher level codes will then be assigned. A second researcher will check the coding on random excerpts from the transcriptions.</p>
---	---



Describe the method by which you will recruit participants and gain their informed consent. If written consent will not be obtained, this must be justified.  <i>[Note: Please attach a copy of any Information Statements and Consent Forms used, including translation if research is to be conducted with non-English speakers]</i>	A verbal agreement exists between the researcher and Alice Francis of the MIT Accelerate Contest. The researcher will be introduced to semi-finalists in the 2012-13 Accelerate Contest; teams that would like to participate will indicate their interest to the researcher. Individual members of teams agreeing to participate will be asked to sign a consent form (attached). At the conclusion of the recorded data collection period the researcher will be in contact with the participants to collect the equipment (with the exception of one recording device that will be award to a participant based on a drawing). At a date near the end of the academic year, the researcher will inquire about the status of each team/venture. The researcher will make available a brief report on the basic research findings to teams upon request.
Will there be any possible harm that your project may cause to participants (e.g. psychological distress or repercussions of a legal, political or economic nature)? What precautions will be taken to minimise the risk of harm to participants?	It is possible that the recorded conversations will include exchanges about intellectual property. The researcher is interested in how the teams are talking (not in the content of conversations); references to revealing product attributes will be noted in generic terms (e.g.: "technology" or "product") should that utterance be used in a publication or presentation. Similarly, individual names and team/venture names will not be disclosed.
How will you ensure the security of the data collected? What will happen to the data at the end of the project, (if retained, where and how long for)?  <i>[Note: If the project involves obtaining or processing personal data relating to living individuals, (e.g. by recording interviews with subjects even if the findings will subsequently be made anonymous), you will need to ensure that the provisions of the Data Protection Act are complied with. In particular you will need to seek advice to ensure that the subjects provide sufficient consent and that the personal data will be properly stored, for an appropriate period of time.]</i>	Recordings of team conversations will be kept on external hard disks under password protection. Transcriptions will use pseudonyms for individual team members and for each team as a whole; if a team has given its product a name it too will be given a pseudonym.  When not being used by the researcher all materials will be stored in a locked cabinet accessible only to the researcher. Similarly all related project materials – such as consent forms – will be kept in a locked cabinet in a unique file.  Project data – including the transcripts, recordings, and other materials – will be kept by the researcher for no more than five years after the conclusion of the research. At that time, the digital material will be deleted, the hard disks reformatted, and the paper files destroyed.

### Part C: Ethical Assessment

Please complete the following questions in relation to your research project.

	yes	no	n/a
Will participants' rights, safety, dignity and well-being be actively respected?	X		
Will you describe the main details of the research process to participants in advance, so that they are informed about what to expect?	X		
Will you tell participants that their participation is voluntary?	X		
Will you tell participants that they may withdraw from the research at any time and for any reason?	X		

	yes	no	n/a
Will participants' rights, safety, dignity and well-being be actively respected?	X		
Will you describe the main details of the research process to participants in advance, so that they are informed about what to expect?	X		
Will you tell participants that their participation is voluntary?	X		
Will you tell participants that they may withdraw from the research at any time and for any reason?	X		
Will confidentiality be appropriately maintained at all stages of the project, including data collection, storage, analysis and reporting?	X		
Will any highly personal, private or confidential information be sought from participants?		x	
Will participants be involved whose ability to give informed consent may be limited (e.g. children)?		x	
Will the project raise any issues concerning researcher safety?		x	
Are there conflicts of interest caused by the source of funding?			X

Please provide any additional information which may be used to assess your application in the space below.

#### Part D: Supervisor's Declaration

As the supervisor for this research I can confirm that I believe that all research ethics issues have been considered in accordance with the University Ethics Policy and relevant research ethics guidelines.

Name: ANDI SMART (Primary Supervisor)

Signature: 

Date: 9/1/13

#### Part E: Ethical Approval

Comments of Research Ethics Officer and PGR Management Board.

*[Note: Have potential risks have been adequately considered and minimised in the research? Does the significance of the study warrant these risks being taken? Are there any other precautions you would recommend?]*

This project has been reviewed according to School procedures and has now been approved.

Name: Varuni Wimalawin

(Research Ethics Officer)

Signature: 

Date: 06-12-12

## REFERENCES

- Albolino, S., Cook, R., & O'Connor, M. (2007). Sensemaking, safety, and cooperative work in the intensive care unit. *Cognition, Technology, and Work*, 9, 131-137.
- Aldrich, H. E., & Martinez, M. (2001). Many Are Called, but Few Are Chosen: An Evolutionary Perspective for the Study of Entrepreneurship. *Entrepreneurship: Theory and Practice*, 25(4), 41-56.
- Aldrich, H. E., & Ruef, M. (2006). *Organizations Evolving* (2nd ed.). London: Sage.
- Alvarez, S. A., & Barney, J. B. (2007). Discovery and Creation: Alternative Theories of Entrepreneurial Action. *Strategic Entrepreneurship Journal*, 1(1-2), 11-26. doi: 10.1002/sej.4
- Amabile, T. M., Hadley, C. N., & Kramer, S. J. (2002). Creativity under the gun. *Harvard business review*, 80(8).
- Amason, A. C., Shrader, R., & Tompson, G. H. (2006). Newness and Novelty: Relating Top Management Team Composition to New Venture Performance. *Journal of Business Venturing*, 21(1), 125-148.
- Amason, A. C., & Spienza, H. (1997). The Effects of Top Management Team Size and Interaction Norms on Cognitive and Affective Conflict. *Journal of Management*, 23(4), 495-516.
- Amulya, J. (2004). *What is reflective practice*. Center for Reflective Community Practice. Massachusetts Institute of Technology. Cambridge, MA.
- Anderson, A. R., & Warren, L. (2011). The entrepreneur as hero and jester: Enacting the entrepreneurial discourse. *International Small Business Journal*, 29(6), 589-609.
- Argyris, C. (1976). Single-loop and double-loop models in research on decision making. *Administrative science quarterly*, 21(3), 363-375.
- Arminen, I. (2005). *Institutional interaction: Studies of talk at work* (Vol. 2): Ashgate Publishing, Ltd.
- Arnold, H. J., & Feldman, D. C. (1981). Social Desirability Response Bias in Self-Report Choice Situations. *The Academy of Management Journal*, 24(2), 377-385.
- Atkinsen, J. M., & Drew, P. (1979). *Order in the Court*. London, UK: MacMillan Press.
- Audia, P. G., Locke, E. A., & Smith, K. G. (2000). The paradox of success: An archival and laboratory study of strategic persistence following radical environmental change. *Academy of Management Journal*, 43, 837-853.
- Austin, R. D., & Devin, L. (2003). *Artful Making: What Managers Need to Know About How Artists Work*. Upper Saddle River, NJ: Financial Times Prentice Hall.
- Azoulay, P., & Shane, S. (2001). Entrepreneurs, contracts, and the failure of young firms. *Management Science*, 47(3).
- Badaracco, J. L. (2002). *Leading quietly: An unorthodox guide to doing the right thing*. Boston, MA: Harvard Business School Press.

- Baker, T., Miner, A. S., & Eesley, D. T. (2003). Improvising firms: bricolage, account giving and improvisational competencies in the founding process. *Research Policy*, 32, 255–276.
- Baker, T., & Nelson, R. (2005). Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage. *Administrative Science Quarterly*, 50(3), 329-366.
- Bandura, A. (1998). *Self-Efficacy: The Exercise of Control*. New York, NY: W.H. Freeman.
- Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of applied psychology*, 88(1), 87.
- Baron, R. A. (1998). Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than other people. *Journal of Business Venturing*, 13(4), 275-294.
- Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs “connect the dots” to identify new business opportunities. *Academy of Management Perspectives*, 20, 104-119.
- Baron, R. A. (2007). Behavioral and cognitive factors in entrepreneurship: entrepreneurs as the active element in new venture creation. *Strategic Entrepreneurship Journal*, 1(1-2), 167-182. doi: 10.1002/sej.12
- Baron, R. A., & Ensley, M. D. (2006). Opportunity Recognition as the Detection of Meaningful Patterns: Evidence from Comparisons of Novice and Experienced Entrepreneurs. *Management Science*, 52(8), 1331-1344.
- Baron, R. A., & Markman, G. D. (2000). Beyond Social Capital: How Social Skills Can Enhance Entrepreneurs' Success. *The Academy of Management Executive (1993-2005)*, 14(1), 106-116.
- Baron, R. A., & Markman, G. D. (2003). Beyond social capital: The role of entrepreneurs' social competence in their financial success. *Journal of Business Venturing*, 18(1), 41-60.
- Baron, R. A., & Tang, J. (2009). Entrepreneurs' Social Skills and New Venture Performance: Mediating Mechanisms and Cultural Generality. *Journal of Management*, 35(2), 282-306.
- Barske, T. (2009). Same Token Different Actions: A Conversation Analytic Study of Social Roles, Embodied Actions, and ok in German Business Meetings. *Journal of Business Communication*, 46(1).
- Barton, M. A. (2010). *Shaping entrepreneurial opportunities: Managing uncertainty and equivocality in the entrepreneurial Process*. PhD, University of Michigan, Ann Arbor, MI.
- Barton, M. A., & Sutcliffe, K. M. (2010). Learning When to Stop Momentum. *MIT Sloan Management Review*, 51(3), 69-76.
- Baum, J. R., & Locke, E. A. (2004). The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth. *Journal of Applied Psychology*, 89(4), 587.
- Baumol, W. J. (1986). Entrepreneurship and a century of growth *Journal of Business Venturing*, 1, 141–145.
- Beckman, C. M., & Burton, M. D. (2008). Founding the Future: Path Dependence in the Evolution of Top Management Teams from Founding to IPO. *Organization Science*, 19(1), 3-24.

- Beckman, C. M., Burton, M. D., & O'Reilly, C. (2007). Early Teams: The Impact of Team Demography of VC Financing and Going Public. *Journal of Business Venturing*, 22(2), 147-173. doi: 10.1016/j.jbusvent.2006.02.001
- Berger, J. G. (2004). Dancing on the Threshold of Meaning Recognizing and Understanding the Growing Edge. *Journal of transformative education*, 2(4), 336-351.
- Berger, W. (2012). The Secret Phrase Top Innovators Use. Retrieved from [http://blogs.hbr.org/cs/2012/09/the\\_secret\\_phrase\\_top\\_innovato.html](http://blogs.hbr.org/cs/2012/09/the_secret_phrase_top_innovato.html)
- Bhide, A. (2000). *The Origin and Evolution of New Businesses*. New York, NY: Oxford University Press.
- Bird, B., & Schjoedt, L. (2009). Entrepreneurial Behavior: Its Nature, Scope, Recent Research, and Agenda for Future Research. In M. B. Carsrud (Ed.), *Understanding the Entrepreneurial Mind International Studies in Entrepreneurship* (Vol. 24, pp. 327-358): Springer Science & Business Media, LLC.
- Blatt, R. (2009). Resilience in Entrepreneurial Teams: Developing the Capacity to Pull Through. *Frontiers of Entrepreneurship Research*, 29(11).
- Boden, D. (1994). *The Business of Talk: Organizations in Action*: John Wiley & Sons.
- Boeker, W. (1989). Strategic Change: The Effects of Founding and History. *Academy of Management Journal*, 32(3), 489-515.
- Boeker, W., & Karichalil, R. (2002). Entrepreneurial Transitions: Factors Influencing Founder Departure. *Academy of Management Journal*, 45(4), 818-826.
- Brown, S. L., & Eisenhardt, K. M. (1997). The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations. *Administrative Science Quarterly*, 42(1), 1-34.
- Brown, T. (2008). Design thinking. *Harvard Business Review*, 86(6), 84.
- Bruner, J. (1996). Frames for Thinking: Ways of Meaning Making. In D. Olson & N. Torrence (Eds.), *Modes of Thought: Explorations in Culture and Cognition*. NY, NY: Cambridge University Press.
- Brush, C. (2007). Avoiding a strike-out in the first innings. In H. Neergaard & J. P. Ulhoi (Eds.), *Handbook of Qualitative Research in Entrepreneurship*. Cheltenham, UK: Edward Elgar.
- Brush, C., Manolova, T., & Edelman, L. (2008). Properties of emerging organizations: An empirical test. *Journal of Business Venturing*, 23(5), 547-566. doi: 10.1016/j.jbusvent.2007.09.002
- Bryman, A., & Bell, E. (2007). *Business Research Methods* (2 ed.). Oxford.: Oxford University Press.
- Burt, R. S. (1992). *Structural Holes*. Cambridge, MA: Harvard University Press.
- Burton, M. D., & Beckman, C. M. (2007). Leaving a Legacy: Position Imprints and Successor Turnover in Young Firms. *American Sociological Review*, 72(2), 239-266.
- Busenitz, L. W., & Barney, J. B. (1997). Differences between Entrepreneurs and Managers in Large Organizations: Biases and Heuristics in Strategic Decision-Making. *Journal of Business Venturing*, 12(1), 9-30.
- Cameron, K. S., Dutton, J., & Quinn, R. E. (2003). *Positive Organizational Scholarship: Foundations of a New Discipline*: Berrett-Koehler Publishers.

- Campbell, D. T. (1990). *Asch's Moral Epistemology for Socially Shared Knowledge. The Legacy of Solomon Asch: Essays in Cognition and Social Psychology*. Hillsdale, NJ: Erlbaum.
- Caproni, P. (2001). *Management Skills for Everyday Life: The Practical Coach*. Upper Saddle River, NY: Prentice-Hall.
- Cardon, M., Zietsma, C., Saparito, P., Matherne, B., & Davis, C. (2005). A tale of passion: New insights into entrepreneurship from a parenthood metaphor. *Journal of Business Venturing*, 20(1), 23–45.
- Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., & Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small Business Economics*, 41(4), 913-930.
- Carr, P., & Beaver, G. (2002). The enterprise culture: Understanding a misunderstood concept. *Strategic Change*, 11(2), 105–113.
- Carter, N., Gartner, W. B., & Reynolds, P. D. (1996). Exploring Statrtup Event Sequences. *Journal of Business Venturing*, 11(3), 151-166.
- Cazden, C. B. (1987). English for Academic Purposes: The Student-Talk Register. *English Education*, 19(1).
- Cazden, C. B. (1988). *Classroom discourse: The language of teaching and learning*. Portsmouth, NH: Heinemann.
- Cazden, C. B. (2011). Dell Hymes's Construct of "Communicative Competence". *Anthropology & Education Quarterly*, 42(4), 364-369.
- Chandler, G., & Lyon, D. (2001). Issues of research design and construct management in entrepreneurship research: The past decade. *Entrepreneurship Theory and Practice*, 25(4), 101–113.
- Chen, X. P., Yao, X., & Kotha, S. (2009). Entrepreneur passion and preparedness in business plan presentations: a persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, 52(1), 199-214.
- Christensen, C., M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, MA: Harvard Business School Press.
- Clayman, S. (2002). Sequence and solidarity. In S. R. Thye & E. J. Lawler (Eds.), *Group cohesions, trust and solidarity* (pp. 229-253). Amsterdam: Elsevier.
- Clayman, S., & Ann, R. (1998). Gatekeeping in action: Editorial conferences and assessments of newsworthiness. *American Sociological Review*, 63(2), 178-199.
- Clayman, S., Elliott, M. N., Heritage, J., & Laurie, M. (2006). "Historical Trends in Questioning Presidents, 1953-2000. *Presidential Studies Quarterly*, 36(3), 561-583.
- Cliff, J. E., Jennings, P. D., & Greenwood, R. (2006). New to the game and questioning the rules: The experiences and beliefs of founders who start imitative versus innovative firms. *Journal of Business Venturing*, 21(5), 633-663.
- Collins, J. (2001). Level 5 Leadership: The Triumph of Humility and Fierce Resolve. *Harvard Business Review*(January).
- Cooper, A. C. (2003). Entrepreneurship: The past, the present, the future. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of entrepreneurship research* (pp. 21–34). London: Kluwer Academic Publishers.

- Cooper, A. C., & Bruno, A. (1977). Success among high technology firms. *Business Horizons* 20(2), 16-22.
- Cooper, A. C., Folta, T., & Woo, C. (1995). Entrepreneurial information search. *Journal of business venturing*, 10(2), 107-120.
- Cornelissen, J. P. (2005). Beyond compare: Metaphor in organization theory. *Academy of Management Review*, 30(4), 751–764.
- Cornelissen, J. P. (2012). Sensemaking Under Pressure: The Influence of Professional Roles and Social Accountability on the Creation of Sense. *Organization Science*, 23(1), 118-137.
- Cornelissen, J. P., & Clarke, J. (2012). Sensegiving in entrepreneurial contexts: The use of metaphors in speech and gesture to gain and sustain support for novel business ventures. *International Small Business Journal*, 30(3), 213-241.
- Cornelissen, J. P., & Clarke, J. S. (2010). Imagining and Rationalizing Opportunities: Inductive Reasoning and the Creation and Justification of New Ventures. *The Academy of Management Review*, 35(4).
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.
- Creswell, J. W. (2012). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Thousand Oaks, CA: Sage.
- Croll, A., & Yoskovitz, B. (2013). *Lean Analytics: Use Data to Build a Better Startup Faster*. O'Reilly Media.
- Cross, N. (2011). *Design Thinking: Understanding how designers think and work*. Oxford: Berg.
- Csikszentmihalyi, M. (1990). *Flow: the psychology of optimal experience*. New York: Harper & Row.
- Davidsson, P. (2003). The domain of entrepreneurship research: Some suggestions. In J. Katz & D. A. Shepherd (Eds.), *Advances in entrepreneurship, firm emergence and growth* (Vol. 6, pp. 315–372). London: JAI.
- Davidsson, P. (2005). *Researching entrepreneurship* (Vol. 5). NY, NY: Springer.
- Davidsson, P., & Tonelli, M. (2013). *Killing our darling: why we need to let go of the entrepreneurial opportunity construct*. Paper presented at the Australia Centre for Entrepreneurship (ACE) Research Exchange Conference 2013, Queensland University of Technology, Brisbane, Australia.
- Delmar, F., & Shane, S. (2003). Does business planning facilitate the development of new ventures? *Strategic Management Journal*, 24(12), 1165-1185.
- Di Stefano, G., Gino, F., Pisano, G. P., & Staats, B. R. (2014). *Learning by Thinking: How Reflection Aids Performance*. Working Paper. Harvard Business School Technology & Operations Mgt. Harvard Business School.
- Dietrich, R., & von Meltzer, T. (2003). *Communication in High Risk Environments*: Buske.
- Dong, W., Lepri, B., Kim, T., Pianesi, F., & Pentland, A. (2012). *Modeling Conversational Dynamics and Performance in a Social Dilemma Task*. Paper presented at the 5th International Symposium on Communications, Control, and Signal Processing, Rome, Italy.



- Donnellon, A. (1986). Language and communication in organizations: Bridging cognition and behavior. In H. P. Sims, Jr. & D. A. Gioia (Eds.), *The Thinking Organization* (pp. 136–164). San Francisco, CA: Jossey-Bass.
- Donnellon, A. (1996). *Team talk: the power of language in team dynamics*. Boston, MA: Harvard Business School Press.
- Dorst, K., & Cross, N. (2001). Creativity in the design process: co-evolution of problem-solution. *Design Studies*, 25(5), 425-437.
- Dougherty, D., & Takacs, C. H. (2004). Team Play: Heedful Interrelating as the Boundary for Innovation. *Long Range Planning* 37(6), 569-590.
- Down, S., & Reveley, J. (2004). Generational encounters and the social formation of entrepreneurial identity: Young guns and old farts. *Organization*, 11(2), 233–250.
- Down, S., & Warren, L. (2008). Constructing narratives of enterprise: cliché's and entrepreneurial self-identity. *International Journal of Entrepreneurial Behaviour and Research*, 14(1), 4-23.
- Drew, P., & Heritage, J. (Eds.). (1992). *Talk at work: Interaction in institutional settings*. Cambridge: Cambridge University Press.
- Drew, P., & Sorjonen, M. L. (1997). Institutional Dialogue. In T. A. Van Dijk (Ed.), *Discourse as Social Interaction: Discourse Studies: A Multidisciplinary Introduction* (Vol. 2, pp. 92–118). London, UK: Sage.
- Driskell, J. E., Salas, E., & Johnston, J. (1999). Group Dynamics: Theory, Research, and Practice. 3, 4(291-302).
- Duncan, S. (1974). On the structure of speaker-auditor interaction during speaking turns. *Language in Society*, 3(2), 161–180.
- Dutta, D. K., & Crossan, M. M. (2005). The Nature of Entrepreneurial Opportunities: Understanding the Process Using the 4I Organizational Learning Framework. *Entrepreneurship Theory and Practice*, 29(4), 425-449. doi: 10.1111/j.1540-6520.2005.00092.x
- Dyer, J. H., Gregersen, H. B., & Christensen, C. (2008). Entrepreneur behaviors, opportunity recognition, and the origins of innovative ventures. *Strategic Entrepreneurship Journal*, 2(4), 317-338. doi: 10.1002/sej.59
- Dyer, J. H., Gregersen, H. B., & Christensen, C. (2011). *The Innovator's DNA: Mastering the Five Skills of Disruptive Innovation*. Boston, MA: Harvard Business Review Press.
- Edelman, L. F., Brush, C. G., Manolova, T., & Greene, P. G. (2010). Start-up Motivations and Growth Intentions of Minority Nascent Entrepreneurs. *Journal of Small Business Management* 48(2), 174-196.
- Edmondson, A. C. (1999). Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly*, 44(2), 350-383.
- Edmondson, A. C. (2003). Speaking Up in the Operating Room: How Team Leaders Promote Learning in Interdisciplinary Action Teams. *Journal of Management Studies*, 40(6), 1419-1452.
- Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, 1155–1179.
- Eesley, C. E., & Roberts, E. B. (2012). Are You Experienced or Are You Talented? When Does Innate Talent Versus Experience Explain Entrepreneurial Performance? *Strategic Entrepreneurship Journal*, 6, 207–219.

- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of Management Review*, 14(4), 532-550.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: opportunities and challenges. *Academy of Management Journal*, 50(1), 25-32.
- Eisenhardt, K. M., & Schoonhoven, C. B. (1990). Organizational growth: linking founding team, strategy, environment, and growth among U.S. semiconductor ventures, 1978–1988. *Administrative Science Quarterly*, 35(3).
- Elfring, T., & Hulsink, W. (2003). Networks in entrepreneurship: the case of high-technology firms. *Small business economics*, 21(4), 409-422.
- Ensley, M. D., & Pearce, C. L. (2000). *Vertical and shared leadership in new venture top management teams: implications for new venture performance*. Paper presented at the 20th Annual Entrepreneurship Research Conference, Babson Park, MA.
- Ensley, M. D., & Pearce, C. L. (2001). Shared Cognition in Top Management Teams: Implications for New Venture Performance. *Journal of Organizational Behavior*, 2(Shared Cognition), 145-160.
- FCC, Telecommunications Act of 1996, Pub. LA. No. 104-104, 110 Stat. 56 (1996).
- Feeser, H., R., & Willard, G. E. (1990). Founding Strategy and Performance: A Comparison of High and Low Growth High Tech Firms. *Strategic Management Journal*, 11(2), 87-98.
- Feld, B. (2012). *Startup Communities*: Wiley.
- Feld, B., & Cohen, D. (2010). *Do More Faster: TechStars Lessons to Accelerate Your Startup*. NJ: Wiley.
- Felin, T., & Zenger, T. R. (2009). Entrepreneurs as theorists: on the origins of collective beliefs and novel strategies. *Strategic Entrepreneurship Journal*, 3(127–46).
- Fischer, U., McDonnell, L., & Orasanu, J. (2007). Linguistic Correlates of Team Performance: Toward A Tool for Monitoring Team Functioning During Space Missions. *Aviation, Space, and Environmental Medicine*, 78(5).
- Fleming, D. (1998). Design Talk: Constructing the Object in Studio Conversations. *Design Issues*, 14(2), 41-62.
- Fletcher, D. E., & Watson, T. J. (2007). Entrepreneurship, Management Learning and Negotiated Narratives: 'Making it Otherwise for Us—Otherwise for Them'. *Management Learning*, 38(1), 9-26.
- Forbes, D. P. (2005). Are Some Entrepreneurs More Overconfident than Others? *Journal of Business Venturing*, 20(5).
- Furr, N., & Ahlstrom, P. (2011). *Nail It Then Scale It*: NISI Institute.
- Galbraith, J. (1973). *Designing complex organizations*. Reading, MA: Addison Wesley.
- Galbraith, J. (1974). Organization design: An information processing view. *Interfaces* 4(3), 28-36.
- Gartner, W. B. (1985). A Conceptual Framework for Describing the Phenomenon of New Venture Creation. *The Academy of Management Review*, 10(4), 696-706.

- Gartner, W. B. (1988). Who is an entrepreneur? Is the wrong question. *American Journal of Small Business* 12(4), 47-68.
- Gartner, W. B. (1990). What are we talking about when we talk about entrepreneurship? *Journal of Business Venturing*, 5(1), 15-28. doi: 10.1016/0883-9026(90)90023-m
- Gartner, W. B. (2010). A new path to the waterfall: A narrative on a use of entrepreneurial narrative. *International Small Business Journal*, 28(1), 6-19.
- Gartner, W. B., Carter, N., & Hills, G. (2004). The Language of Opportunity. In C. Steyaert & D. Hjorth (Eds.), *New Movements In Entrepreneurship*. Northampton, MA: Edward Elgar Publishing.
- Gartner, W. B., Shaver, K. G., Gatewood, E., & Katz, J. (1994). Finding the Entrepreneur in Entrepreneurship. *Entrepreneurship: Theory and Practice*, 18(3), 5-9.
- Geertz, C. (1973). Thick description: Toward an interpretive theory of culture *The Interpretation of Cultures* (pp. 3-30). New York, NY: Basic Books.
- Geertz, C. (1983). *Local knowledge*. New York, NY: Basic Books.
- Gemmell, R. M., Boland, R. J., & Kolb, D. A. (2012). The socio-cognitive dynamics of entrepreneurial ideation. *Entrepreneurship: Theory and Practice*, 36(5), 1053-1073.
- Gibb, A. A. (1996). Entrepreneurship and small Business Management: Can we afford to neglect them in the twenty-first century business school? *British Journal of Management*, 7(4), 309-324.
- Glaser, B. G., & Strauss, A. L. (2009). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New Jersey: Transaction Publishers.
- Goldschmidt, G., & Rodgers, P. (2013). The design thinking approaches of three different groups of designers based on self-reports. *Design Studies*, 34(4), 454-471.
- Gompers, P., Kovner, A., Lerner, J., & Scharfstein, D. (2010). Performance persistence in entrepreneurship. *Journal of Financial Economics*, 96, 18–32.
- Goodwin, C., & Heritage, J. (1990). Conversation Analysis. *Annual Review of Anthropology*, 19, 283-307.
- Grégoire, D. A., Corbett, A. C., & McMullen, J. S. (2011). The Cognitive Perspective in Entrepreneurship: An Agenda for Future Research. *Journal of Management Studies*, 48(6). doi: 10.1111/j.1467-6486.2010.00922.x
- Guimera, R., Uzzi, B., Spiro, J., & Nunes Amaral, L. (2005). Team assembly mechanisms determine collaboration network structure and team performance. *Science*, 308, 697–702.
- Hackman, J. R. (2002). *Leading teams: setting the stage for great performances*. Boston, MA: Harvard Business School Press.
- Haleblian, J., & Finkelstein, S. (1993). Top Management Team Size, CEO Dominance, and Firm Performance: The Moderating Roles of Environmental Turbulence and Discretion. *The Academy of Management Journal*, 36(4), 844-863.
- Hambrick, D. C. (1994). Top management groups: a conceptual integration and reconsideration of the "team" label. In L. L. Cummings & B. Staw (Eds.), *Research in Organizational Behavior* (Vol. 16, pp. 171–213.). Greenwich, CT: JAI Press.

- Handley, K., Sturdy, A., Fincham, R., & Clark, T. (2006). Within and Beyond Communities of Practice: Making Sense of Learning Through Participation, Identity and Practice. *Journal of Management Studies*, 43(3).
- Hansen, D., Shrader, R., & Monllor, J. (2011). Defragmenting Definitions of Entrepreneurial Opportunity. *Journal of Small Business Management*, 49(2), 283-304.
- Hardy, C., Lawrence, T. B., & Grant, D. (2005). Discourse and Collaboration: The Role of Conversations and Collective Identity. *The Academy of Management Review*, 30(1), 58-77.
- Hargadon, A. B., & Bechky, B. A. (2006). When Collections of Creatives Become Creative Collectives: A Field Study of Problem Solving at Work. *ORGANIZATION SCIENCE*, 17(4), 484-500. doi: 10.1287/orsc.1060.0200
- Harthorne, J. (2014). Mass Challenge, from <http://masschallenge.org/accelerator>
- Hayward, M. L. A., Forster, W., Sarasvathy, S. D., & Fredrickson, B. (2010). Beyond hubris: How highly confident entrepreneurs rebound to venture again. *Journal of Business Venturing*, 25(6), 569-578. doi: 10.1016/j.jbusvent.2009.03.002
- Hayward, M. L. A., Shepherd, A., & Griffin, D. (2006). A hubris theory of entrepreneurship. *Management Science*, 52(2), 160-172.
- HBS. (2014). Rock Center Accelerator, 2014, from <http://www.hbs.edu/entrepreneurship/mbacurriculum/rock-accelerator.html>
- Heath, R. L., Pearce, W. B., Shotter, J., Taylor, J. R., Kersten, A., Zorn, T., . . . Deetz, S. (2006). The Processes of Dialogue. *Management Communication Quarterly*, 19(3), 341-375. doi: 10.1177/0893318905282208
- Heifetz, R. (1994). *Leadership Without Easy Answers*. Cambridge, MA: Harvard University Press.
- Heritage, J. (1995). Conversation Analysis: Methodological Aspects. In U. Quasthoff (Ed.), *Aspects of Oral Communication* (Vol. 21, pp. 391-418): Walter de Gruyter.
- Heritage, J. (1999). Conversation analysis at century's end: practices of talk-in-interaction, their distributions, and their outcomes. *Research on Language & Social Interaction*, 32(1-2), 69-76.
- Heritage, J., & Clayman, S. (2010). *Talk in action: Interactions, Identities, and Institutions*: Wiley-Blackwell.
- Heritage, J., & Maynard, D. (2006). *Communication in Medical Care*. New York, NY: Cambridge University Press.
- Hewitt, J. P., & Stokes, R. (1975). Disclaimers. *American Sociological Review*, 40(1), 1-11.
- Hill, R. C., & Levenhagen, M. (1995). Metaphors and mental models: Sensemaking and sensegiving in innovative and entrepreneurial activities. *Journal of Management*, 21(6), 1057-1074.
- Hmieleski, K. M., & Baron, R. A. (2008). When does entrepreneurial self-efficacy enhance versus reduce firm performance? *Strategic Entrepreneurship Journal*, 2, 57-72.
- Hmieleski, K. M., Corbett, A. C., & Baron, R. A. (2013). Entrepreneurs' Improvisational Behavior and Firm Performance: A Study of Dispositional

- and Environmental Moderators. *Strategic Entrepreneurship Journal*, 7, 138–150.
- Hochberg, Y. V., Ljungqvist, A., & Lu, Y. (2007). Whom You Know Matters: Venture Capital Networks and Investment Performance. *The Journal of Finance*, 62(1), 251-301. doi: 10.1111/j.1540-6261.2007.01207.x
- Hoffman, R., & Casnocha, B. (2012). *The Startup of You*: Crown Business.
- Honig, B. (2004). Entrepreneurship Education: Toward a Model of Contingency-Based Business Planning. *Academy of Management Learning and Education*, 3(3), 258-273.
- Hoskisson, R. E., Covin, J., Volberda, H., & Johnson, R. A. (2011). Revitalizing Entrepreneurship: The Search for New Research Opportunities. *Journal of Management Studies*, 48(6).
- Ibarra, H. (1999). Provisional Selves: Experimenting with Image and Identity in Professional Adaptation. *Administrative Science Quarterly*, 44(4), 764-791.
- Ireland, R. D., Reutzell, C. R., & Webb, J. W. (2007). Entrepreneurship research in AMJ: what has been published, and what might the future hold? *Entrepreneurship: concepts, theory and perspective* (pp. 335). Berlin: Springer.
- Jacobs, C. D., & Heracleous, L. T. (2005). Answers for questions to come: reflective dialogue as an enabler of strategic innovation. *Journal of Organizational Change Management*, 18(4), 338-352. doi: 10.1108/09534810510607047
- Jauch, L. R., & Kenneth, K. (1986). Strategic management of uncertainty. *Academy of Management Review*, 11(4), 777-790.
- Jefferson, G. (1973). A case of precision timing in ordinary conversation: Overlapped tag-positioned address terms in closing sequences. *Semiotica*, 9(1), 47-96.
- Jefferson, G. (1984). Transcript Notation. In J. Heritage (Ed.), *Structures of Social Interaction*. New York, NY: Cambridge University Press.
- Jefferson, G. (2004). Glossary of transcript symbols with an introduction. In G. H. Lerner (Ed.), *Conversation Analysis: Studies from the first generation* (pp. 13-31). Amsterdam/Philadelphia: John Benjamins.
- Johnson, R. B., & Christensen, L. B. (2004). *Educational research: Quantitative, qualitative, and mixed approaches*. Boston, MA: Allyn and Bacon.
- Kaffka, G. A., Singaram, R., Kraaijenbrink, J., & Groen, A. J. (2013). *Sensebreaking and the Development of Entrepreneurial Cognition*. Available at SSRN. Retrieved from <http://ssrn.com/abstract=2251927>
- Kamm, J. B., Shuman, J. C., Seeger, J. A., & Nurick, A. J. (1990). Entrepreneurial Teams in New Venture Creation: A Research Agenda. *Entrepreneurship Theory and Practice*(Summer), 7-17.
- Kanki, B. G., & Smith, G. M. (2001). Training aviation communication skills. In E. salas, C. Bowers & E. Edens (Eds.), *Improving Teamwork in Organizations*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Kappe, B., & Wyder, T. (2014). Chicago Challenge, from <http://chicagoleanchallenge.com/>
- Katzenback, J. R., & Smith, D., K. (2005). The Discipline of Teams. *Harvard Business Review*(July-August).

- Kegan, R. (1982). *The Evolving Self*. Cambridge, MA: Harvard University Press.
- Kegan, R. (1994). *In Over our Heads: The Mental Demands of Modern Life*. Cambridge, MA: Harvard University Press.
- Kegan, R. (2000). What 'form' transforms?: a constructive-developmental approach to transformative learning. In J. Mezirow (Ed.), *Learning as transformation: critical perspectives on a theory in progress* (pp. 35–70). San Francisco, CA: Jossey-Bass.
- Kegan, R., & Lahey, L. (2010). "From subject to object: a constructive-developmental approach to reflective practice. In N. Lyons (Ed.), *Handbook of reflection and reflective inquiry: mapping a way of knowing for professional reflective inquiry* (pp. 433–449). NY, NY: Springer.
- Kendra, J. M., & Wachtendorf, T. (2003). Elements of resilience after the world trade center disaster: reconstituting New York City's Emergency Operations Centre. *Disasters*, 27(1), 37-53.
- Kerr, W., Lerner, J., & Schoar, A. (2010). *The Consequences of Entrepreneurial Finance: A Regression Discontinuity Analysis*. Harvard Business School.
- Kimbell, L. (2012). Rethinking Design Thinking: Part II. *Design and Culture*, 4(2).
- Kirzner, I. M. (1997). Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach. *Journal of Economic Literature*, 35(1), 60-85.
- Knight, F. (1921). *Risk, Uncertainty and Profit*. Boston, MA: Houghton Mifflin.
- Koeller, C. T., & Lechler, T. (2006). Economic and Managerial Perspectives on New Venture Growth: An Integrated Analysis. *Small Business Economics*, 26(5), 427-437.
- Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall.
- Kramer, E.-H., van Bezooijen, B., & Delahaij, R. (2010). Sensemaking during operations and incidents. In J. Soeters, P. van Fenema & R. Beeres (Eds.), *Managing Military Organizations: Theory and Practice*: Routledge.
- Krieger, J. L. (2005). Shared Mindfulness in Cockpit Crisis Situations An Exploratory Analysis. *Journal of business communication*, 42(2), 135-167.
- Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (Ed.), *Metaphor and Thought II* (Second ed., pp. 202-251). Cambridge, UK: Cambridge University Press.
- Lakoff, R. (1975). *Language and Woman's Place*. New York, NY: Harper and Row.
- Lambrechts, F., Bouwen, R., Grieten, S., Huybrechts, J., & Schein, E. H. (2011). Learning to Help Through Humble Inquiry and Implications for Management Research, Practice, and Education: An Interview With Edgar H. Schein. *Academy of Management Learning and Education*, 10(1), 131–147.
- Langer, E. J. (1989a). *Mindfulness*. Reading, Mass.: Addison-Wesley Pub. Co.
- Langer, E. J. (1989b). Minding matters: The consequences of mindlessness-mindfulness. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 137–173). San Diego, CA: Academic Press.
- Langer, E. J. (1992). Matters of mind: Mindfulness/mindlessness in perspective. *Consciousness and Cognition*, 1(3), 289-305.
- Langer, E. J. (1997). *The power of mindful learning*. Reading, Mass.: Addison-Wesley.

- Langer, E. J. (2002). Well-Being: Mindfulness versus Positive Evaluation. In C. R. Snyder & S. J. López (Eds.), *Handbook of positive psychology*. New York, NY: Oxford University Press.
- Langer, E. J., Hatem, M., Joss, J., & Howell, M. (1989). Conditional teaching and mindful learning: The role of uncertainty in education. *Creativity Research Journal*, 2(3), 139-150.
- Langer, E. J., & Piper, A. I. (1987). The Prevention of Mindlessness. *Journal of Personality and Social Psychology*, 53(2).
- Larty, J., & Hamilton, E. (2011). Structural approaches to narrative analysis in entrepreneurship research: Exemplars from two researchers. *International Small Business Journal*, 29(3), 220-237.
- Lazear, E. P. (2004). Balanced Skills and Entrepreneurship *The American Economic Review*, 24(2), 208-211.
- Lechler, T. (2001). Social Interaction: A Determinant of Entrepreneurial Team Venture Success. *Small Business Economics*, 16(4), 263-278. doi: 10.1023/a:1011167519304
- Lee, D., & Tsang, E. W. K. (2001). The effects of entrepreneurial personality, background and network activities on venture growth. *Journal of management studies*, 38(4), 583-602.
- Lester, R. K., & Piore, M. J. (2004). *Innovation, the missing dimension*. Cambridge, Mass.: Harvard University Press.
- Levi-Strauss, C. (1966). *The Savage Mind*. Chicago: University of Chicago Press.
- Lichtenstein, S., & Fischhoff, B. (1977). Do those who know more also know more about how much they know? *Organizational Behavior and Human Performance*, 20(2), 159-183.
- Linde, C. (1988). The quantitative study of communicative success: Politeness and accidents in aviation discourse. *Language in Society*, 17(03), 375-399.
- Lipshitz, R., & Strauss, O. (1997). Coping with Uncertainty: A Naturalistic Decision-Making Analysis. *Organizational Behavior and Human Decision Processes*, 69(2), 149-163. doi: 10.1006/obhd.1997.2679
- Llewellyn, D., & Wilson, K. (2003). The controversial role of personality traits in entrepreneurial psychology. *Education and Training*, 45(6), 341-345.
- Lobler, H. (2006). Learning Entrepreneurship from a Constructivist Perspective. *Technology Analysis and Strategic Management*, 19(1), 19-38.
- Long, T., & Johnson, M. (2000). Rigour, reliability and validity in qualitative research. *Critical Effectiveness in Nursing*, 4(1), 30-37.
- Lounsbury, M., & Glynn, M. A. (2001). Cultural entrepreneurship: stories, legitimacy, and the acquisition of resources. *Strategic Management Journal*, 22, 545-564. doi: 10.1002/smj.188
- Low, M., & Abrahamson, E. (1997). Movements, bandwagons, and clones: Industry evolution and the entrepreneurial process. *Journal of Business Venturing*, 12(6), 435-457.
- Low, M., & MacMillan, I. (1988). Entrepreneurship: Past research and future challenges. *Journal of Management* 35, 139-161.
- Luck, R. (2012). 'Doing designing': On the practical analysis of design in practice. *Design Studies*, 38(6), 521-529.

- Lumpkin, G. T., & Dess, G. (1996). Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance. *Academy of Management Review*, 21(1), 135-172.
- Luthje, C., Herstatt, C., & Von Hippel, E. (2002). *The dominant role of "local" information in user innovation: The case of mountain biking*. MIT.
- Lyons, J. (1977). *Semantics* (Vol. 1). Cambridge: Cambridge University Press.
- Mallak, L. A. (1998). Measuring resilience in health care provider organizations. *Health Manpower Management*, 24(4), 148-152.
- Markman, G. D., Baron, R. A., & Balkin, D. B. (2005). Are perseverance and self-efficacy costless? Assessing entrepreneurs' regretful thinking. *Journal of Organizational Behavior*, 26(1), 1-19.
- Marsden, P. V. (1983). Restricted Access in Networks and Models of Power. *American Journal of Sociology*, 88(4), 686-717.
- Martens, M. L., Jennings, J. E., & Jennings, P. D. (2007). Do the stories they tell get them the money they need?: The role of entrepreneurial narratives in resource acquisition. *Academy of Management Journal*, 40, 1107-1132.
- Martin, R. (2009). *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Boston, MA: Harvard Business School Press.
- Matthews, B., & Heinemann, T. (2012). Analysing conversation: Studying design as social action. *Design Studies*, 33(6), 649-672.
- Maynard, D. (2006). Ethnography and Conversation Analysis. In S. Hesse-Biber & P. Leavy (Eds.), *Emergent Methods in Social Research*. Thousand Oaks, CA: Sage Publications.
- McKelvie, A., Haynie, J. M., & Gustavsson, V. (2011). Unpacking the uncertainty construct: Implications for entrepreneurial action. *Journal of Business Venturing*, 26(3), 273-292. doi: 10.1016/j.jbusvent.2009.10.004
- McMullen, J. S., & Shepherd, D. A. (2006). Entrepreneurial Action and the Role of Uncertainty in the Theory of the Entrepreneur. *The Academy of Management Review*, 31(1), 132-152.
- Mead, G. H. (1934). *Mind, Self, and Society: From the Standpoint of a Social Behaviorist* (Vol. 1). Chicago, IL: University of Chicago Press.
- Mezirow, J. (2000). Learning to Think Like an Adult: Core Concepts of Transformation Theory. In J. Mezirow (Ed.), *Learning as Transformation: Critical Perspectives on at Theory in Progress* (pp. 3-33). San Francisco, CA: Jossey-Bass.
- Michel, A., & Wortham, S. (2009). *Bullish on Uncertainty: how organizational cultures transform participants*. New York, NY: Cambridge University Press.
- Middleton, D. (1997). Conversational Remembering and Uncertainty : Interdependencies of Experience as Individual and Collective Concerns in Teamwork. *Journal of Language and Social Psychology*, 16(4), 389-410.
- Miles, M., & Huberman, M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*
- Miller, K. D. (2007). Risk and rationality in entrepreneurial processes. *Strategic Entrepreneurship Journal*, 1(1-2), 57-74.
- Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review*, 12(1), 133-143.



- Miner, A. S., Bassoff, P., & Moorman, C. (2001). Organizational improvisation and learning: A field study. *Administrative Science Quarterly*, 46(2), 304-337.
- Miner, A. S., Bassoff, P., & Moorman, C. (2001). Organizational improvisation and learning: a field study. *Administrative Science Quarterly*, 46(2), 304-337.
- MIT. (2014). MIT 100K, from <http://mit100k.org/>
- Moerman, M. (1988). *Talking culture: ethnography and conversational analysis*. Philadelphia, PA: University of Pennsylvania Press.
- Moore, G. (1991). *Crossing the Chasm*. NY, NY: Harper Collins.
- Moorman, C., & Miner, A. S. (1998). The convergence of planning and execution: improvisation in new product development. *Journal of Marketing*, 61, 1-20.
- Morgan, J., Ben B. , Glickman, A. S., Woodard, E. A., Blaiwes, A. S., & Salas, E. (1986). Measurement of Team Behaviors in a Navy Environment. Final Report.: Old Dominion Univ., Norfolk, VA. Center for Applied Psychological Studies.
- Moroz, P., & Hindle, K. (2012). Entrepreneurship as a process: Toward harmonizing multiple perspectives. *Entrepreneurship Theory and Practice*, 36(4), 781-818.
- Morris, J. A., Brotheridge, Celeste, & Urbanski, J. (2005). Bringing humility to leadership: Antecedents and consequences of leader humility. *Human Relations*, 58.
- Morris, M. H., Kuratko, D. F., Schindehutte, M., & Spivack, A. (2012). Framing the Entrepreneurial Experience. *Entrepreneurship Theory and Practice*, 36(1), 11-40.
- Morris, M. H., Miyasaki, N. N., Watters, C. E., & Coombes, S. M. (2006). The dilemma of growth: understanding venture size choices of women entrepreneurs. *Journal of Small Business Management* 44(2), 221-244.
- Morse, J. M. (2003). Principles of mixed methods and multimethod research design. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 189-208): Sage.
- Mullen, M. R., Budeva, D. G., & Doney, P. M. (2009). Research Methods in the Leading Small Business-Entrepreneurship Journals: A Critical Review with Recommendations for Future Research. *Journal of Small Business Management*, 47(3), 287-307. doi: 10.1111/j.1540-627X.2009.00272.x
- Mullins, J., & Komisar, R. (2009). *Getting to Plan B: Breaking through to a Better Business Model*. Boston, MA: Harvard Business School Press.
- Murray, F., & Tripsas, M. (2004). The exploratory processes of entrepreneurial firms: The role of purposeful experimentation. In J. Baum & A. M. McGahan (Eds.), *Business Strategy over the Industry Lifecycle* (Vol. 21, pp. 45-75): Emerald Group Publishing Limited.
- Nager, M. (2014). Startup Weekend, 2014, from <http://startupweekend.org>
- Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.
- Nevile, M. (2004a). *Beyond the Black Box: Talk-In-Interaction in the Airline Cockpit*. Ashgate.
- Nevile, M. (2004b). Integrity in the Airline Cockpit: Embodying Claims About Progress for the Conduct of an Approach Briefing. *Research on Language & Social Interaction*, 37(4), 447-480.

- Nevile, M., & Walker, M. B. (2005). A context for error: using conversation analysis to represent and analyse recorded voice data. *Human Factors and Aerospace Safety*, 5(5).
- Newbert, S. L. (2005). New Firm Formation: A Dynamic Capability Perspective. *Journal of small business management*, 43(1), 55-77.
- Newman, I., & Benz, C. (1998). *Qualitative-quantitative Research Methodology: Exploring the Interactive Continuum*. Carbondale and Edwardsville: Southern Illinois University Press.
- Nicholson, L., & Anderson, A. R. (2005). News and Nuances of the Entrepreneurial Myth and Metaphor: Linguistic Games in Entrepreneurial Sense-making and Sense-giving. *Entrepreneurship Theory and Practice*, 29(2), 153–172.
- Nielsen, R., Marrone, J. A., & Slay, H. S. (2010). A new look at humility: Exploring the humility concept and its role in socialized charismatic leadership. *Journal of Leadership & Organizational Studies*, 17, 33-43.
- Nobel, C. (2011). Teaching a 'Lean Startup' Strategy. *Harvard Business School Working Knowledge*, from <http://hbswk.hbs.edu/item/Vai>
- O'Connor, E. (2004). Storytelling to be real: Narrative, legitimacy building and venturing. In D. Hjorth & C. Steyaert (Eds.), *Narrative and Discursive Approaches in Entrepreneurship* (pp. 105–124). London: Edward Elgar.
- Oak, A. (2011). What can talk tell us about design?: Analyzing conversation to understand practice. *Design Studies*, 32(3), 211-234. doi: 10.1016/j.destud.2010.11.003 211
- Ogbor, J. (2000). Mythicizing and reification in entrepreneurial discourse: Ideology-critique of entrepreneurial studies. *Journal of Management Studies*, 37(5), 605–635.
- Orasanu, J. (2005). Crew collaboration in space: a naturalistic decision making perspective. *Aviat Space Environ Med*, 76(6, Supplement), B154–163.
- Osborn, A. F. (1957). *Applied imagination: Principles and procedures of creative problem-solving*. New York, NY: Charles Scribner's Sons.
- Owens, B. (2009). *Humility in Organizational Leadership*. PhD, University of Washington.
- Owens, T., Robinson, D., & Smith-Lovin, L. (2010). Three Faces of Identity. *Annual Review of Sociology*, 36, 477-499.
- Ozgen, E., & Baron, R. A. (2007). Social sources of information in opportunity recognition: Effects of mentors, industry networks, and professional forums. *Journal of Business Venturing*, 22(2), 174-192.
- Palich, L. E., & Bagby, D. R. (1995). Using cognitive theory to explain entrepreneurial risk-taking: Challenging conventional wisdom. *Journal of Business Venturing*, 10(6), 425-438.
- Park, J. S. (2005). Opportunity recognition and product innovation in entrepreneurial hi-tech start-ups: a new perspective and supporting case study. *Technovation* 25(7), 739-752.
- Perkins, D. N. (2000). *Archimedes' bathtub: the art and logic of breakthrough thinking*. New York, NY: W. W. Norton and Company.
- Perkins, D. N. (2003). *King Arthur's Round Table: How Collaborative Conversations Create Smart Organizations*: Wiley.

- Perry, J. T., Gaylen, C., & Markova, G. (2012). Entrepreneurial effectuation: a review and suggestions for future research. *Entrepreneurship Theory and Practice*, 36(4), 837-861.
- Peschl, M. F., & Fundneider, T. (2008). *Emergent Innovation—a Socio-Epistemological Innovation Technology. Creating Profound Change and Radically New Knowledge as Core Challenges in Knowledge Management*. Paper presented at the iknow 08: International Conference on Knowledge Management and New Media Technology, Graz.
- Pinchot, G. (1986). Intrapreneuring revisited. *European Management Journal*, 4(2), 89–94.
- Psathas, G. (1990a). Direction-Giving in Interaction. *Réseaux*, 1(Hors Série 8), 183-198.
- Psathas, G. (1990b). *Interaction Competence* (Vol. Volume 1): University Press of America.
- Psathas, G. (1995a). *Conversation Analysis: The Study of Talk in Interaction*. Thousand Oaks, CA: Sage Publications.
- Psathas, G. (1995b). "Talk and Social Structure" and "Studies of Work". *Human Studies*, 18(2-3, Ethnomethodology: Discussions and Contributions), 139-155.
- Rae, D. (2004). Practical theories from entrepreneurs' stories: discursive approaches to entrepreneurial learning. *Journal of Small Business and Enterprise Development*, 11(2).
- Rae, D. (2006). Entrepreneurial learning: A conceptual framework for technology-based enterprise. *Technology Analysis & Strategic Management*, 18(1), 39-56.
- Raelin, J. (2001). Public Reflection as the Basis of Learning. *Management Learning*, 32(1), 11-30.
- Rasmussen, E., Mosey, S., & Wright, M. (2011). The Evolution of Entrepreneurial Competencies: A Longitudinal Study of University Spin-Off Venture Emergence. *Journal of Management Studies*, 48(6), 1314–1345.
- Rawls, A. W. (2008). Harold Garfinkel, Ethnomethodology and Workplace Studies. *Organization Studies*, 29(5), 701–732.
- Read, S., Song, M., & Smit, W. (2009). A meta-analytic review of effectuation and venture performance. *Journal of Business Venturing*, 24(6), 573-587. doi: 10.1016/j.jbusvent.2008.02.005
- Reagans, R., & McEvily, B. (2003). Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes. *Management Science* 49(4).
- Reis, E. (2011). *The Lean Startup*. New York, NY: Crown Business.
- Reis, E. (2014). The Lean Startup, 2014, from <http://theleanstartup.com/>
- Renzulli, L. A., Aldrich, H., & Moody, J. (2000). Family matters: Gender, networks, and entrepreneurial outcomes. *Social Forces*, 79(2), 523-546.
- Rixon, A., McWaters, V., & Rixon, S. (2006). Exploring the language of facilitation. *Group Facilitation: A Research and Applications Journal*, 7.
- Roberson, Q. M. (2006). Justice in teams: The activation and role of sensemaking in the emergence of justice climates *Organizational Behavior and Human Decision Processes*, 100(2), 177–192.

- Roberts, E. B. (1991). *Entrepreneurs in High Technology: Lessons from MIT and Beyond*. New York, NY: Oxford University Press.
- Roberts, E. B., & Eesley, C. E. (2009). *Entrepreneurial Impact: The Role of MIT*: Kauffman Foundation.
- Rodan, S., & Galunic, C. (2004). More than Network Structure: How Knowledge Heterogeneity Influences Managerial Performance and Innovativeness. *Strategic Management Journal*, 25(6), 541-562.
- Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A Simplest Systematics for the Organization of Turn-Taking for Conversation. *Language*, 50(4), 696-735.
- Salas, E., Burke, C. S., Bowers, C. A., & Wilson, K. A. (2001). Team training in the skies: does crew resource management (CRM) training work? *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 43(4), 641-674.
- Sarasvathy, S. D. (2001). Causation and effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26(2), 243-263.
- Sarasvathy, S. D. (2004a). Constructing corridors to economic primitives: Entrepreneurial opportunities as demand-side artifacts. In J. Butler (Ed.), *Opportunity Identification and Entrepreneurial Behavior: Research in entrepreneurship and management*: IAP.
- Sarasvathy, S. D. (2004b). The questions we ask and the questions we care about: Reformulating some problems in entrepreneurship research. *Journal of Business Venturing*, 19(5), 707-717.
- Sarasvathy, S. D. (2008). *Effectuation: Elements of Entrepreneurial Expertise*: Edward Elgar Publishing.
- Sarasvathy, S. D., & Dew, N. (2005). New market creation through transformation. *Journal of Evolutionary Economics*, 15(5), 533-565. doi: 10.1007/s00191-005-0264-x
- Sarasvathy, S. D., Dew, N., Velamuri, S. R., & Venkataraman, S. (2005). Three Views of Entrepreneurial Opportunity. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of Entrepreneurship Research* (Vol. 1, pp. 141-160): Springer US.
- Sarasvathy, S. D., Dew, N., & Ventresca, M. (2009). Unpacking Entrepreneurship as Collective Activity: Opportunities, Activity, and Context. In G. T. Lumpkin & J. Katz (Eds.), *Entrepreneurial Strategic Content Advances in entrepreneurship, firm emergence and growth* (Vol. 11): Emerald Group Publishing.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students*: Financial Times/Prentice Hall.
- Scharmer, C. O. (2007). *Theory U. Leading from the future as it emerges. The social technology of presencing*. Cambridge, MA: Society for Organizational Learning.
- Schegloff, E. A. (1991). Reflections on talk and social structure. In D. Boden & D. Zimmerman (Eds.), *Talk and social structure: Studies in ethnomethodology and conversation analysis* (pp. 44-70). Cambridge: Polity.
- Schegloff, E. A. (1993). Reflections on quantification in the study of conversation. *Research on language and social interaction*, 26(1), 99-128.

- Schegloff, E. A. (2000). Overlapping Talk and the Organization of Turn-Taking for Conversation. *Language in Society*, 29(1), 1-63.
- Schegloff, E. A., Jefferson, G., & Sacks, H. (1977). The Preference for Self-Correction in the Organisation of Repair in Conversation. *Language*, 53, 361-382.
- Schegloff, E. A., & Sacks, H. (1973). Opening up Closings. *Semiotica*, 8(4), 289-327. doi: 10.1515/semi.1973.8.4.289
- Schein, E. H. (1983). The Role of the Founder in Creating Organizational Culture. *Organizational Dynamics*, 12(1), 13-28.
- Schein, E. H. (2003). "On dialogue, culture, and organizational learning. *Reflections* 4(4), 27-38.
- Schein, E. H. (2009). *Helping: How to offer, give, and receive help*. San Francisco, CA: Berrett-Koehler.
- Schön, D. A. (1983). *The Reflective Practitioner: How Professionals Think In Action*. New York, NY: Basic Books.
- Schön, D. A. (1988). Designing: Rules, types and words. *Design studies*, 9(3), 181-190.
- Schrage, M. (1999). *Serious Play: How the World's Best Companies Simulate to Innovate*. Cambridge, MA: Harvard Business Review Press.
- Schramm, C. (2011). The Three Things Entrepreneurs Do for Our Economy. *Kauffman Sketchbook*. Kansas City, MO Kauffman Foundation.
- Schroeder, B. (2014). LeanModel Start-up Competition, 2014, from [http://lavincenter.sdsu.edu/programs/lean\\_model.php](http://lavincenter.sdsu.edu/programs/lean_model.php)
- Schumpeter, J. A. (1942). *Capitalism, Socialism, and Democracy*. New York, NY: Harper and Brothers.
- Seale, C. (1999). Quality in Qualitative Research. *Qualitative Inquiry*, 5(4), 465-478.
- Senyard, J. M., Powell Brown, E., Davidsson, P., & Steffens, P. R. (2013). *Born unfinished : boundaries of bricolage effectiveness*. Paper presented at the Australia Centre for Entrepreneurship (ACE) Research Exchange Conference 2013, Queensland University of Technology, Brisbane, QLD.
- Sexton, D., & Bowman, N. (1986). The entrepreneur: A capable executive and more. *Journal of Business Venturing*, 1(1), 129-140.
- Sexton, J. B., & Helmreich, R. L. (1999). *Analyzing cockpit communication: The links between language, performance, error, and workload*. Paper presented at the Tenth International Symposium on Aviation Psychology, Columbus, OH.
- Sexton, J. B., & Helmreich, R. L. (2000). Analyzing cockpit communication: The links between language, performance, error, and workload. *Human Performance in Extreme Environments*, 5(1), 63-68.
- Sexton, J. B., & Helmreich, R. L. (2003). Using Lanugage in the Cockpit: Relationships with Workload and Performance. In R. Dietrich (Ed.), *Communication in High Risk Environments*.
- Sexton, J. B., Makary, M. A., Tersigni, A. R., Pryor, D., Hendrich, A., Thomas, E., J., . . . Pronovost, P. J. (2006). Teamwork in the operating room: frontline perspectives among hospitals and operating room personnel. *Anesthesiology* 105(5), 877-884.

- Shane, S. (2003). *A General Theory of Entrepreneurship. The individual-opportunity Nexus*. Massachusetts: Edward Elgar Publishing, Inc.
- Shane, S. (2008). *The Illusions of Entrepreneurship*. New Haven, CT: Yale Univeristy Press.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25, 217–226.
- Shapero, A. (1982). Social dimensions of entrepreneurship. In C. A. Kent, D. Sexton & K. Vesper (Eds.), *The encyclopedia of entrepreneurship* (pp. 72–90). Englewood Cliffs, NJ: Prentice-Hall.
- Shepherd, D. A., & Krueger, N. F. (2002). An Intentions-Based Model of Entrepreneurial Teams' Social Cognition. *Entrepreneurship Theory and Practice*, 27(2), 167-185.
- Shotter, J. (1993). *Conversational realities: Constructing life through language*. Thousand Oaks, CA: Sage.
- Siegel, A. I., & Federman, P. J. (1973). Communications Content Training as an Ingredient in Effective Team Performance. *Ergonomics*, 16(4), 403-416.
- Smart, G. (1998). Mapping Conceptual Worlds: Using Interpretive Ethnography to Explore Knowledge-Making in a Professional Community. *The Journal of Business Communication*, 35(1), 111-127.
- Snook, S. A. (2000). *Friendly Fire: The Accidental Shootdown of U.S. Black Hawks Over Northern Iraq*. Princeton, NJ: Princeton University Press.
- Somers, M. R. (1994). The Narrative Constitution of Identity: A Relational and Network Approach. *Theory and Society*, 23(5), 605-649.
- Song, M., Podoyntsina, K., Van Der Bij, H., & Halman, J. I. M. (2008). Success Factors in New Ventures: A Meta-analysis. *Journal of Product Innovation Management*, 25, 7–27.
- Sorensen, J., & Chang, P. (2006). *Determinants of Successful Entrepreneurship: A Review of the Recent Literature*. Working Paper. Ewing Marion Kauffman Foundation. Retrieved from <http://ssrn.com/abstract=1244663>
- Sorensen, M. (2007). How smart is smart money? A two-sided matching model of venture capital. *Journal of Finance*, 62(6), 2725–2762.
- Stanford. (2014). E Corner, 2012, from <http://ecorner.stanford.edu/>
- Stevenson, H. H. (1983). *Who are the Harvard Self-employed*. Paper presented at the Frontiers of entrepreneurship research: proceedings of the annual Babson College Entrepreneurship Research Conference, Wellesley, MA.
- Stone, D., Bruce, P., & Heen, S. (1999). *Difficult Conversations*. New York, NY: Viking/Penguin.
- Strauss, A. L., & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage.
- Stuart, T. E., & Ding, Waverly W. (2006). When Do Scientists Become Entrepreneurs? The Social Structural Antecedents of Commercial Activity in the Academic Life Sciences. *American Journal of Sociology*, 112(1), 97-144.
- Stuart, T. E., & Sorenson, O. (2007). Strategic networks and entrepreneurial ventures. *Strategic Entrepreneurship Journal*, 1(3-4), 211-227.
- Sutcliffe, K. M., & Vogus, T. J. (2003). Organizing for resilience. In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), *Positive organizational scholarship*:

- Foundations of a new discipline*. San Francisco, CA: Berrett-Koehler Publishers, Inc.
- Tashakkori, A., & Teddie, C. (Eds.). (2003). *Handbook of Mixed Methods in Social and Behavioral Research*: Sage.
- Taylor, E. (2007). An update of transformative learning theory: A critical review of the empirical research (1999–2005). *International Journal of Lifelong Education*, 26(2), 173-191.
- ten Have, P. (2007). *Doing Conversation Analysis: A Practical Guide*
- Thomas, J. B., Clark, S. M., & Gioia, D. A. (1993). Strategic Sensemaking and Organizational Performance: Linkages among Scanning, Interpretation, Action, and Outcomes. *The Academy of Management Journal*, 36(2), 239-270.
- Thomke, S. (1998). Managing Experimentation in the Design of New Products. *Management Science*, 44(6), 743-762.
- Timmons, J. A. (1989). *The Entrepreneurial Mind*. Andover, MA: Brick House Publishing.
- Timmons, J. A. (1994). *New Venture Creation: Entrepreneurship for the 21st Century* (4 Revised ed.): Irwin.
- Trott, P. (2002). *Innovation management and new product development*. London: Pearson Education.
- Tsoukas, H. (2009). A Dialogical Approach to the Creation of New Knowledge in Organizations. *Organization Science*, 20(6), 941-957.
- Tsui, A. B. M. (1989). Beyond the Adjacency Pair. *Language in Society*, 18(4), 545-564.
- UW. (2014). Wisconsin Big Idea Contest, from <http://wisconsinbigideatournament.com/index.html>
- Valkenburg, R., & Dorst, K. (1998). The reflective practice of design teams. *Design studies*, 19(3), 249-271.
- Van de Ven, A. H., & Polley, D. (1992). Learning while innovating. *Organization Science*, 3(1), 92-116.
- Van Manen, M. (2006). Reflexivity and the Pedagogical Moment: The Practical-Ethical Nature of Pedagogical Thinking and Acting. In I. Westbury & G. Milburn (Eds.), *Rethinking Schooling: Twenty-Five Years of the Journal of Curriculum Studies*: Routledge.
- Von Hippel, E. (2005). *Democratizing Innovation*
- Vygotsky, L. S. (1998). *Mind in Society: Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.
- Wageman, R., & Gordon, F. M. (2005). As the Twig Is Bent: How Group Values Shape Emergent Task Interdependence in Groups. *Organizational Science*, 16(6), 687-700.
- Wahyuni, D. (2012). The Research Design Maze: Understanding Paradigms, Cases, Methods and Methodologies. *Journal of Applied Management Accounting Research*, 10(1), 69-80.
- Weick, K. E. (1979). *The social psychology of organizing*: Random House.
- Weick, K. E. (1993). The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster. *Administrative Science Quarterly*, 38(4), 628-652.

- Weick, K. E. (1995). *Sensemaking in Organizations* (Vol. Volume 3 of Foundations for Organizational Science). London: Sage.
- Weick, K. E. (1996). Drop your tools: an allegory for organizational studies. *Administrative Science Quarterly*, 41, 301–313.
- Weick, K. E. (1998). Introductory Essay: Improvisation as a Mindset for Organizational Analysis. *Organizational Science*, 9(5), 543-555.
- Weick, K. E. (2001). Leadership as the legitimation of doubt. In W. Bennis, G. Schweiter & T. Cumming (Eds.), *The Future of Leadership* (pp. 91–102). San Francisco, CA: Jossey-Bass.
- Weick, K. E., & Roberts, K. H. (1993). Collective Mind in Organizations: Heedful Interrelating on Flight Decks. *Administrative Science Quarterly*, 38(3), 357-381.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (1999). Organizing for High Reliability: Processes of Collective Mindfulness. In R. S. Sutton & B. M. Staw (Eds.), *Research in Organizational Behavior* (Vol. 1, pp. 81–123). Stanford: Jai Press.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the Process of Sensemaking. *Organization Science*, 16(4), 409-421.
- West, G. P. (2007). Collective Cognition: When Entrepreneurial Teams, Not Individuals, Make Decisions. *Entrepreneurship Theory and Practice*, 31(1), 77-102. doi: 10.1111/j.1540-6520.2007.00164.x
- Wilson, D. (2007). *Team Learning In Action*. PhD, Harvard Graduate School of Education, Cambridge.
- Wiltbank, R., Read, S., Dew, N., & Sarasvathy, S. D. (2009). Prediction and control under uncertainty: Outcomes in angel investing. *Journal of Business Venturing*, 24(2), 116-133.
- Wolcott, H. F. (1994). *Transforming Qualitative Data: Description, Analysis, and Interpretation*. London: Sage.
- Wood, M. S., & McKinley, W. (2010). The production of entrepreneurial opportunity: a constructivist perspective. *Strategic Entrepreneurship Journal*, 4(1), 66–84.
- Zacharakis, A. L., & Shepherd, D. A. (2007). The pre-investment process: VCs' decision policies. In H. Landstrom (Ed.), *The Handbook of Research on Venture Capital* (pp. 177-192).
- Zahra, S. A., & Wright, M. (2011). Entrepreneurship's Next Act. *Academy of Management Perspectives*, 25(4), 67-83.
- Zhou, H., Hills, G., & Seibert, S. E. (2005). The Mediating Role of Self-Efficacy in the Development of Entrepreneurial Intentions. *Journal of Applied Psychology*, 90(6).